

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

NOVEMBER 15, 1950



Fothergilla Major

SEEDS TREE—SHRUB—PERENNIAL **HERBST BROTHERS**
FLOWER—VEGETABLE—GRASS 92 Warren St., New York 7, N. Y.

Correspondence with seed collectors and growers invited.

Free catalog "Seeds for Nurserymen."

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SHRUBS

Following is a partial listing of the more popular varieties now in heavy demand. As the fall season is now closing, we would suggest early reservation on your anticipated requirements for Spring, 1951, delivery.

For descriptions and more complete listing, refer to our September 4th Wholesale Trade List.

WRITE FOR SPECIAL PRICES ON QUANTITY LOTS.

	Per 100		Per 100		Per 100		Per 100
<i>Acanthopanax sieboldianus</i>		<i>Cotoneaster acutifolia</i>		<i>Kolkwitzia amabilis</i>		<i>Spiraea Anthony Waterer</i>	
3 to 4 ft.	\$ 45.00	3 to 4 ft.	\$55.00	3 to 4 ft.	\$ 70.00	2 to 2 1/2 ft.	\$40.00
2 to 3 ft.	35.00	2 to 3 ft.	40.00	2 to 3 ft.	50.00	18 to 24 ins.	35.00
18 to 24 ins.	25.00			18 to 24 ins.	40.00	15 to 18 ins.	30.00
<i>Almond, pink-flowering</i>		<i>Cydonia japonica</i>		12 to 18 ins.	30.00	<i>Spiraea arguta</i>	
3 to 4 ft.	50.00	3 to 4 ft.	40.00	2 to 3 ft.	70.00	2 to 3 ft.	40.00
2 to 3 ft.	45.00	2 to 3 ft.	35.00	18 to 24 ins.	50.00	18 to 24 ins.	30.00
18 to 24 ins.	35.00	18 to 24 ins.	25.00	<i>Lilac, Charles X</i>		<i>Spiraea billiardi</i>	
12 to 18 ins.	25.00	<i>Deutzia Pride of Rochester</i>		3 to 4 ft.	70.00	2 to 3 ft.	40.00
<i>Berberis atropurpurea</i>		4 to 5 ft.	55.00	<i>Lilac, Common Purple</i>		2 to 3 ft.	30.00
2 to 2 1/2 ft.	45.00	3 to 4 ft.	40.00	2 to 3 ft.	32.00	18 to 24 ins.	22.00
18 to 24 ins.	32.00	2 to 3 ft.	30.00	<i>Lilac, President Grevy</i>		<i>Spiraea froebeli</i>	
15 to 18 ins.	25.00	<i>Ecochorda grandiflora</i>		3 to 4 ft.	85.00	2 1/2 to 3 ft.	35.00
12 to 15 ins.	20.00	3 to 4 ft.	50.00	2 to 3 ft.	70.00	2 to 2 1/2 ft.	27.00
<i>Berberis thunbergi</i>		2 to 3 ft.	40.00	18 to 24 ins.	50.00	18 to 24 ins.	22.00
2 to 2 1/2 ft.	27.00	18 to 24 ins.	28.00	<i>Lilac, rothomagensis</i>		12 to 18 ins.	16.00
18 to 24 ins.	22.00	<i>Forsythia fortunei, intermedia,</i>		3 to 4 ft.	60.00	<i>Spiraea thunbergi</i>	
15 to 18 ins.	18.00	<i>intermedia spectabilis</i>		2 to 3 ft.	45.00	18 to 24 ins.	30.00
12 to 15 ins.	14.00	3 to 4 ft.	45.00	18 to 24 ins.	35.00	<i>Spiraea vanhouttei</i>	
<i>Berberis, Truehedge Columberry</i>		2 to 3 ft.	30.00	<i>Philadelphus Amalthee</i>		4 to 5 ft.	35.00
3 to 4 ft.	45.00	18 to 24 ins.	22.00	3 to 4 ft.	40.00	3 to 4 ft.	28.00
18 to 24 ins.	37.00	<i>Honeysuckle, grandiflora rosea</i>		2 to 3 ft.	50.00	2 to 3 ft.	22.00
15 to 18 ins.	30.00	4 to 5 ft.	45.00	18 to 24 ins.	40.00	18 to 24 ins.	16.00
12 to 15 ins.	23.00	3 to 4 ft.	40.00	<i>Philadelphus coronarius</i>		<i>Symphoricarpos albus</i>	
<i>Buckthorn, Cathartica</i>		2 to 3 ft.	30.00	4 to 5 ft.	50.00	3 to 4 ft.	30.00
3 to 4 ft.	30.00	18 to 24 ins.	22.00	3 to 4 ft.	40.00	2 to 3 ft.	22.00
2 to 3 ft.	22.00	<i>Honeysuckle, morrowi</i>		2 to 3 ft.	30.00	18 to 24 ins.	16.00
18 to 24 ins.	16.00	4 to 5 ft.	50.00	18 to 24 ins.	22.00	<i>Symphoricarpos chenaulti</i>	
12 to 18 ins.	10.00	3 to 4 ft.	45.00	<i>Philadelphus virginialis</i>		3 to 4 ft.	40.00
<i>Buckthorn, Frangula</i>		4 to 5 ft.	45.00	3 to 4 ft.	60.00	2 to 3 ft.	27.00
3 to 4 ft.	35.00	3 to 4 ft.	40.00	2 to 3 ft.	45.00	18 to 24 ins.	22.00
2 to 3 ft.	28.00	2 to 3 ft.	30.00	18 to 24 ins.	35.00	<i>Tamarix hispida</i>	
18 to 24 ins.	20.00	18 to 24 ins.	22.00	<i>Physocarpus opulifolius</i>		3 to 4 ft.	40.00
<i>Caryopteris Blue Mist</i>		<i>Hydrangea arborescens grandiflora</i>		3 to 4 ft.	45.00	2 to 3 ft.	30.00
No. 1	28.00	3 to 4 ft.	55.00	2 to 3 ft.	35.00	18 to 24 ins.	22.00
Med.	20.00	2 to 3 ft.	45.00	<i>Privet, ibota regelianum</i>		<i>Viburnum opulus</i>	
<i>Cornus alba sibirica</i>		18 to 24 ins.	35.00	18 to 24 ins.	40.00	2 to 3 ft.	50.00
4 to 5 ft.	55.00	12 to 18 ins.	25.00	12 to 18 ins.	20.00	18 to 24 ins.	40.00
2 to 3 ft.	45.00	<i>Hydrangea paniculata grandiflora</i>		<i>Privet, ibota vicari</i>		<i>Weigela Eva Rathke</i>	
2 to 3 ft.	35.00	3 to 4 ft.	60.00	2 to 2 1/2 ft.	50.00	3 to 4 ft.	40.00
<i>Cornus Goldentwig</i>		2 to 3 ft.	45.00	18 to 24 ins.	40.00	2 to 3 ft.	30.00
4 to 5 ft.	55.00	18 to 24 ins.	35.00	15 to 18 ins.	30.00	18 to 24 ins.	22.00
3 to 4 ft.	50.00	<i>Hypericum frondosum (Aureum)</i>		12 to 15 ins.	22.00	<i>Weigela hendersoni</i>	
2 to 3 ft.	40.00	2 to 3 ft.	40.00	<i>Privet, vulgare</i>		3 to 4 ft.	45.00
18 to 24 ins.	28.00	18 to 24 ins.	30.00	3 to 4 ft.	15.00	2 to 3 ft.	35.00
<i>Cornus Variegated (Elegantissima)</i>		<i>Ilex verticillata</i>		2 to 3 ft.	12.00	18 to 24 ins.	22.00
4 to 5 ft.	110.00	2 to 3 ft.	50.00	18 to 24 ins.	9.00	<i>Weigela rosea</i>	
3 to 4 ft.	90.00	18 to 24 ins.	40.00	<i>Rhus cotinus</i>		3 to 4 ft.	45.00
2 to 3 ft.	75.00	<i>Kerria japonica</i>		4 to 5 ft.	125.00	2 to 3 ft.	35.00
18 to 24 ins.	55.00	2 to 3 ft.	60.00	3 to 4 ft.	90.00	18 to 24 ins.	25.00
<i>Corylus americana</i>		18 to 24 ins.	50.00	2 to 3 ft.	65.00		
3 to 4 ft.	55.00	12 to 18 ins.	35.00	<i>Salix purpurea</i>			
2 to 3 ft.	40.00	<i>Kerria japonica pleniflora</i>		2 to 2 1/2 ft.	30.00		
18 to 24 ins.	30.00	2 to 3 ft.	60.00	18 to 24 ins.	25.00		
		18 to 24 ins.	50.00	15 to 18 ins.	18.00		
		12 to 18 ins.	35.00	12 to 15 ins.	14.00		



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YEAR

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Since 1875

Mount Arbor Nurseries
• SHENANDOAH IOWA •

AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

VOL. XCII, No. 10

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Forms for the December 1 issue will close Monday, November 13.

Mail copy to arrive at Chicago by that date—no later!



**USING BIRD
VITA-BANDS**
results in higher
net profit: they
require minimum
of labor, produce
stronger, better
delphiniums. (See
story below.)

The amazing facts about DELPHINIUMS grown in Bird Vita-Bands

Seed in January, put in Bird Vita-Bands in March, bloom
in August—*six months less than is ordinarily needed.*

Raised right in flats—no costly field transplanting. Easier
to handle at time of sale.

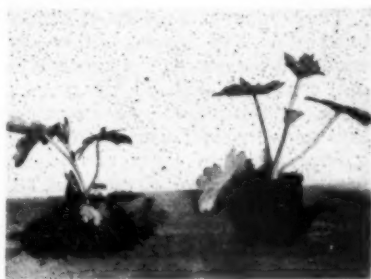
No strength-sapping wintering over in the field.

Your customers get healthier, stronger plants—can trans-
plant with no shock or setback.

It all adds up to profit for you—satisfaction for your custom-
ers. It is an amazing story. Prove it to yourself this year!



BIRD VITA-BANDS are nutrient-treated,
eliminate usual wintering over period,
produce sturdy growth and blooms
shown here.



VITA-BAND protection given rootball is
shown by plant at right. (Other was
not in Vita-Band.) Eliminating root-
shock and transplant setback aids vig-
orous constant growth.



VITA-BAND 40 designed for long growing
periods usually up to 40 weeks. Extra
heavy construction for durability. Im-
pregnated with balanced plant food...
your observation will determine need of
additional feeding. We recommend re-
moving Band when transplanting.



VITA-BAND 10 for short growing peri-
ods. Will usually contain root growth
up to approximately 8 to 10 weeks. Nu-
trient-treated with quickly available
plant food... your judgment deter-
mines need for additional feeding. Espe-
cially good for annuals and vegetables.



PLANT BANDS	PRICE PER 1000—SIZES IN INCHES							
	1½ x 1½ x 2½	1½ x 1½ x 2½	2 x 2 x 2½	2 x 2 x 3	2½ x 2½ x 3	3 x 3 x 3	4 x 4 x 3	4 x 4 x 4
Sold in units of 1000 only								
VITA-BAND 40	—	5.40	5.95	6.50	8.00	9.25	—	—
VITA-BAND 10	3.30	3.55	4.00	4.55	6.30	6.15	8.05	10.15

Prices higher in Rocky Mtn., Pacific Coast, Texas and Gulf State areas.

BIRD VITA-BANDS • TOM THUMB FLATS • VITA-POTS • RED POTS

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logue, or write us direct...
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East Walpole, Mass.

AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*

Joan L. Kilner, *Assistant Editor*

Editorial

ADVERTISING STANDARDS.

Anyone interested in advertising would do well to study the space employed by large corporations in the general magazines. The advertisements represent a large investment not only in the space purchased, but also in the research and the preparation of copy preliminary to publication. Such promotional programs are directed by men of long experience and thorough knowledge, assisted by the top-notch advertising agencies, which employ men, whether artists, copywriters or executives, also at the head of their profession.

Such advertising copy is likely to be conservative, accurate in statement and free of exaggeration and double-dealing words. Attempts to arouse enthusiasm in the prospective buyers rely upon carefully chosen words to convey an emphatic message, not extravagant claims and obviously biased comparisons.

The plantsman who uses smaller space in periodicals of lesser circulation can advertise successfully in the same manner. Many are doing so now. That there are not more may be due to the fact that some blatant advertisers with little regard for accuracy and fair dealing make the periodicals they patronize uninviting to sound and conservative merchandisers.

There is an old saying of economists that bad money drives out good; in other words, if the currency of a country is debased, the coinage on a solid standard will disappear into stockings and strongboxes. The garden pages of some newspapers furnish an example of how bad advertising drives out good. The fair-minded plantsman will not seek to compete in such pages with the impossible bargains and misleading offers that usurp the advertising space there.

Publishers close to the horticultural field are aware of this natural process. Good business, as well as sound ethics, impels them to scrutinize offers and scan copy to be certain it is accurate and honest.

It is not enough to stay just within the law in advertising. Seeds, bulbs and plants are not ascertainable as to their value upon receipt; what makes them of most worth is

the flowers and foliages, the finished specimens, which give pleasure to the gardener. He is buying on trust. Hence the horticultural advertiser should be, like Caesar's wife, above suspicion. The need for high advertising standards is nowhere greater than in the horticultural field.

PUBLICITY IN BRITAIN.

At its recent jubilee conference, the Horticultural Trades Association, which is the nurserymen's organization in Great Britain, voted that a subcommittee be set up to investigate ways and means of carrying on publicity for the organization and its members' products. The decision came at the end of a 3-hour debate at the annual meeting, which brought out a good many desirable aspects of the proposed promotional campaign, according to reports in British trade papers.

To make the emblem of the association of meaning to the public, it was asserted, display of the emblem was not enough. The public must know what the emblem stands for and why the members feel pride in it.

Some speakers thought that publicity effort should be directed toward members of the trade, in order to include as many as possible in the association membership. At the same time, the standards of membership should be maintained, so that advertising the organization to the public would not bring complaints, instead of orders.

Many thought that the organization should be advertised to the public, so that it would know what the initials H. T. A. meant and what the emblem of membership stood for. Suggested were a page in each member's catalog, a notice in flower show programs and advertising in garden periodicals.

WHAT'S IN A NAME?

Since the old-time name of tree surgeon fell into disrepute—except for possibly one who is engaged exclusively in tree cavity repair—the men engaged in giving health to and preserving our shade trees have sought better titles. Some believe that the terms tree expert and tree science service smack of conceit and pompousness. Not long ago the word arborist was hit upon as the proper term for this calling. It has

received widespread recognition and has a modest sound. Not long since, however, there arose discussion in a shade tree conference meeting as to whether commercial arborist or professional arborist was the proper title. The majority, it seemed agreed, were best described as commercial. Some men with a high regard for their occupation think that the study and training required should win them the accolade of professional.

Perhaps sometime the national association of men in this calling will define the various titles currently employed—the same thing is needed with regard to the many sorts of gardeners and nurserymen listed in telephone and city directories. Meanwhile, some firms may gradually revise their titles so as to reflect the march of progress.

Some arborists dodge the issue by giving themselves no title on their letterheads. One has, with his name and address, the brief indication, "The Care of Trees." A competitor uses the phrase, "Tree Work in All Its Branches." When asked "Who takes care of the trunks?" he promptly answered, "The express company."

SEATTLE LISTS A. A. N.

Members of the American Association of Nurserymen at Seattle, Wash., and vicinity capitalize upon their association membership and publicize it to obtain more sales. Listed in the classified section of the Seattle telephone directory under nurseries is the name of the A. A. N. in capital letters, with the subhead, "Plant America." Under the subhead is the following explanatory statement: "The nurserymen listed below have met all the requirements for membership and have been issued membership for the current year." A similar classified listing of association members was instituted a few years ago at Tulsa, Okla., by members of the A. A. N. there.

PASSING THOUGHT.

The nurserymen of this country will go a long way on the road to "Plant America" if they can convince every one of the owners of the 1,400,000 dwellings being erected this year that "It's Not a Home till It's Planted."

Automatic Ventilation of Storages

The development of storages in other branches of horticulture and agriculture has been in the direction of more exactness of control, and the same is true of storages for nursery stock. The successful preservation of nursery stock in a common storage, especially for lengthy periods, depends on accurate controls of the conditions, primarily temperature and humidity, known to be best suited to a given variety.

The development of an automatic ventilating system for common storages controlled by means of a differential thermostat, and used with an auxiliary heat source where necessary, has greatly increased the value of this type of storage for nursery stock. The adoption of this system has resulted in more efficient utilization of cool outside air than has been possible with manual controls. Also, since the thermostatic controls are adjusted at the factory according to the products to be stored, and since an adequate structure automatically adjusts itself to a temperature suited to the product, growers using this system have been presented a convincing demonstration of the desirability of proper storage temperatures, even during the first year of operation.

This automatic ventilation system was developed at the Ontario Agricultural College, Guelph, Ont., Canada, by three members of the horticultural department, Dr. J. H. L. Truscott, E. W. Franklin and Joy Gilliat. They analyzed the performance of this system in common storages of both frame-type and concrete-type construction, and the results of their experiments together with a complete description of the system were published recently.

Common Storage Method.

A common storage differs from a refrigerated storage only in the method used to establish the desirable temperature for storage of any given product. The common underground storage depends to some extent on soil temperatures, but most common storages depend largely on ventilation with outside air for maintaining desired temperatures. Thus this type of storage building is practicable only where natural sources of cool air are available. Since summer temperatures are generally too high to exert a marked preservative effect, only fall-harvested crops are usually placed in common storages.

Whether constructed above

ground or below ground, common storages are insulated to prevent unwanted heat which comes from the ground, from the storage load, from outside air and from sun radiation. The obvious weakness of the common storage is its dependence on natural temperatures and the inefficient control of inside temperature.

Prior to the development of a sensitive automatic system of ventilation, it was difficult with manual operation to estimate the possible performance, in terms of sustained temperatures, in this type of storage. The ventilating equipment described here operates primarily under control of a differential thermostat and has resulted in a system that gives nearly optimum use of naturally refrigerated air.

Storages Used in Experiments.

The two storages at Ontario Agricultural College used for these experiments in automatic ventilation may be described as adequate, cool structures. Each was approximately twenty feet long, twenty feet wide

and ten feet high. The roofs were flat. Insulation was of the fill type, and its theoretical insulating effect was similar to four inches of standard insulation. A 6-inch thickness of insulation was used for walls and roof, but the floors were not insulated.

One of the storages was of frame construction with heavy asphalted paper and 1/2-inch lumber on both sides of the studdings and rafters. The sill rested upon cedar piles. The roof was finished with heavy roofing paper.

The other was a concrete storage and had an 8-inch thick, cinder-concrete block outer bearing wall, which rested on a concrete foundation. The finish inside the insulation was painted. The 1/2-inch lumber on the sides of the studdings and rafters and the roof were similar to those used on the frame storage.

The two structures had a high ratio of exposed surface area to volume, 1,200 square feet to 4,000 cubic feet. They were isolated from other structures, but the concrete struc-

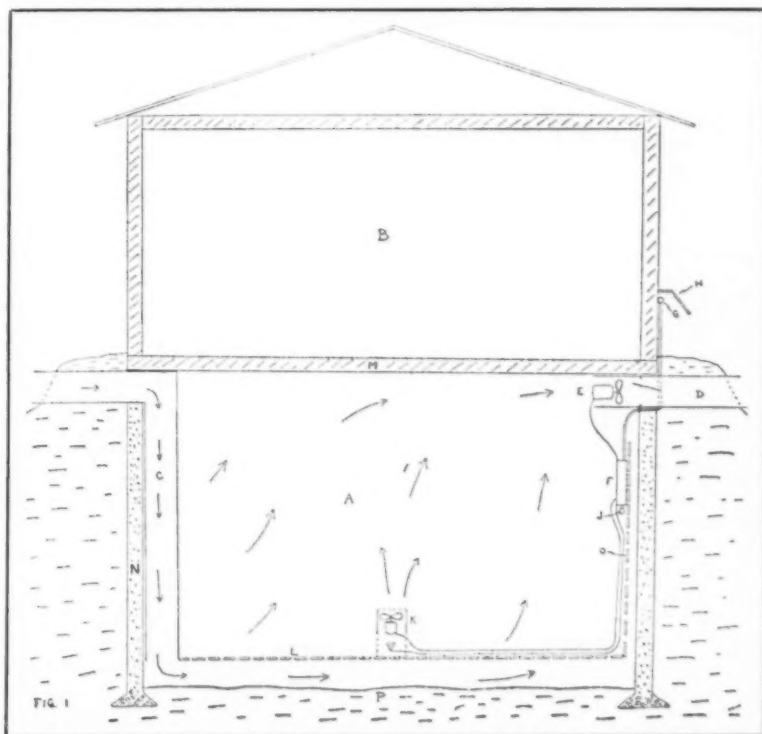


Fig. 1. A representative underground storage equipped with automatic ventilation controls. A—Storage. B—Packing floor or dry storage. C—Air-inlet duct. D—Air-outlet duct. E—Exhaust fan. F—Control panel. G—Outside sensitive air bulb. H—Protecting cover for air bulb. J—Inside sensitive air bulb. K—Air stirring unit. L—False, slatted floor. M—Insulated ceiling. N—Concrete walls. O—False, slatted walls. P—Earth or concrete floor.

ture shaded the southwest wall of the frame structure from most of the sun's direct radiation.

Other factors being equal, heat gains and losses are greater, proportionately, in small storages than in larger ones. These Canadian storages were near minimum size for commercial use, and the problem of heat gain and loss associated with surface-volume ratio was as serious as it is likely to be in commercial storages.

Automatic Ventilation System.

The method of controlling ventilation that proved satisfactory for the common storage experiments at Guelph is suitable without modification for a storage between 4,000 to

differential thermostat breaks a circuit, and in the latter, a cutout thermostat operates. Air moves from floor to ceiling past the storage load and acquires heat which is delivered outside the building.

Auxiliary instruments used with this automatic system of ventilation include a small constant-duty fan, which circulates air in the storage to reduce the spatial differences in temperature associated with air stratification during periods of no ventilation. One unit with a 1/10-horsepower fan serves a 4,000 cubic foot storage adequately, according to the experiments at Ontario Agricultural College. Circulation should be just sufficient to reduce spacial differences in temperature to less than two

age load is held at nearly the same temperature.

The requirements of a differential thermostat for automatic ventilation of common storages were that the instrument would have a sensitivity to a temperature difference of approximately one degree or better, and would not be permanently distorted when the outside sensitive element was exposed to a seasonal temperature range of from 40 degrees to 105 degrees. The Canadian experimenters were unable to find a differential thermostat which met their requirements, for manufactured ones did not supply as close control of temperature as was desired. They therefore found it necessary to design their own.

Two of the three thermostats which they developed were not perfected, although they have inherent qualities and are still under experiment. The third one performed well and is being manufactured by W. C. Woods Co., Ltd., Guelph, Ont. For storages with a capacity of 12,000 cubic feet or less, the cost is about \$225. For larger storages more fans and a magnetic starter switch are required.

New Differential Thermostat.

The thermostat which proved most successful has two air-containing systems consisting of two parallel copper wafers, each three inches in diameter. Each of the wafers is connected on the outer surface by 1/8-inch O. D., or smaller, copper capillary tubing to an air bulb. The air bulb is seven inches long and three inches in diameter and made of steel tubing. One bulb is affected by inside temperatures, while the other is carried outside the storage. The latter is protected from direct sun radiation.

The wafers are mounted in a rigid box with their inner faces joined by a rigid halter so that the motion of one wafer is transmitted to the other. A rigid plastic insulating rod extends through the halter and carries a carbon contact at its distal or lower end. Circuit is made through a second carbon contact, which is screw-adjusted. Current is supplied from a transformer at 6.3 volts, and circuit is completed through a few coils of heating wire wound about, but insulated from, a bent strip of aluminum metal. The convex equator of the aluminum strip is in contact with the switch button of a microswitch. Heating increases the curvature of the aluminum metal when the carbon contacts come together, and the resulting mechanical

(Continued on page 39.)

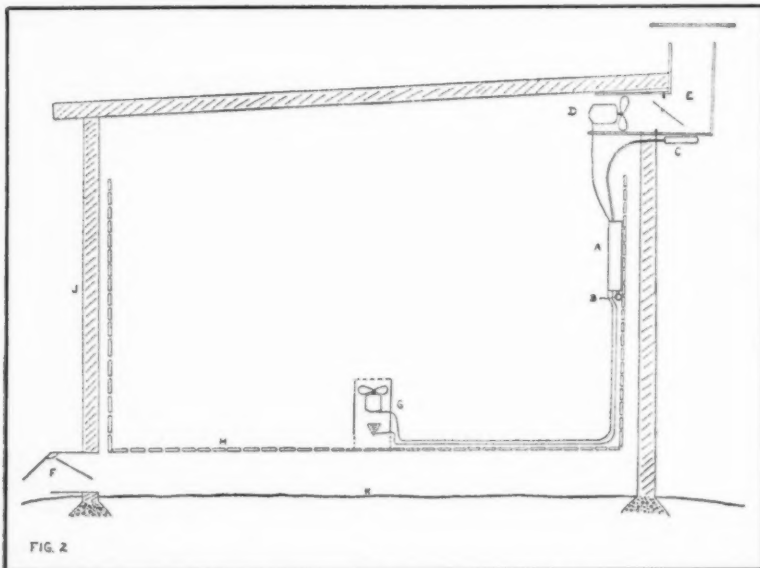


Fig. 2. A representative aboveground storage equipped with automatic ventilation controls. A—Control panel. B—Inside sensitive air bulb. C—Outside sensitive air bulb. D—Exhaust fan. E—Air-outlet duct. F—Air-inlet duct. G—Air stirring unit. H—False, slatted floor and walls. J—Insulated walls and ceiling. K—Earth or concrete floor.

12,000 cubic feet. The controls described will carry a load of a 1/4-horsepower motor. With this system, ventilation is accomplished by drawing cool air through a duct past an automatic shutter to a space under a false, slatted floor. This distributes freezing air before it contacts the stored nursery stock. Warmer air is drawn from the room at ceiling level by a fan and expelled past an automatic shutter in a duct leading to a short chimney. The fan is started by means of a differential thermostat when the outside air is slightly cooler than that inside. Ventilation continues until the outside and inside temperatures are nearly equalized or until a desired inside temperature is reached. In the former instance, the

degrees Fahrenheit. Fast-moving air has a dehydrating effect on stored materials. Normally in winter little ventilation is required, and the storage air stratifies, giving a range of seven to twelve degrees between floor and ceiling.

Connected with the air-circulation system is a thermostat which controls a heat source for use in those storages where heat is necessary. All thermostats used for the experimental storages in the Canadian tests were sensitive enough that possible control of temperature was of the order of plus or minus one degree. However, the desirable effects of the differential thermostat and safety fan are lost unless storage air is circulated so that the whole stor-

Landscape Planting Costs

By George M. Fisher

In presenting the following figures on landscaping costs based on our own nursery's landscape planting operations, these were not intended to be at all conclusive in any sense. They are only intended to be representative of the landscape business as a whole in our region and to open the way for further thought and discussion on this subject by other landscape nurserymen.

To obtain the data presented in the accompanying chart, costs were analyzed from 415 separate planting jobs made during 1948 and 1949. These plantings were made by our skilled planting crews, and charges were based upon actual time put in on the job at an hourly rate for labor.

As nearly as possible, the cases selected for study were typical of the average planting job. For the best segregation of data, only those jobs were selected where one kind of plant material was planted on a single planting operation. Over half of our plantings are jobs using balled and burlapped coniferous and broad-leaved evergreens, and about one-fourth of the jobs are made with bare-root shade trees. So the most samplings were made on jobs using these planting materials, and fewer were made, in proportion, of the minor planting items. Each class of plant material sampled represents as nearly as possible its relative position to the whole planting picture.

As our planting region is characterized by relatively low rainfall and heavy soils lacking humus material, we use horticultural peat moss on practically all of our planting jobs. Obviously, this extra operation of mixing in peat moss with the back-fill soil figures in as part of the planting cost, but actually raises the cost of the job little.

To compute labor costs, a rate of \$2 per man hour was used, which is the labor charge for planting services involving straight labor on the job. This is also our established minimum charge for any planting job. It seems to compare favorably with the rates charged by other landscape nurserymen in our region when performing planting jobs on an hourly rate basis.

Summary of Cost Data.

With these points in mind, I will present the summary of data for each of the seven planting materials

studied. First is the major item of balled and burlapped stock, which is used largely in foundation and entrance plantings. Our plantings generally contain a high percentage of broad-leaved evergreens, such as mahonia, varieties of euonymus, Mentor barberry, pyracantha and the like. Such material has been combined, when balled and burlapped, with coniferous evergreens.

The 200 jobs using B&B evergreens included 1,430 balled evergreen plants with an average retail value of \$6.18 each. It was found that 30 cents worth of peat moss was used for each item. With a labor cost of \$1.25 each for planting, the labor cost for B&B stock was equal to twenty per cent of the cost of the plant. Here again it should be mentioned that when a minimum charge was made on small plantings of one or two items, it was placed at \$2. It might be of interest to know that the evergreens used in these 200 jobs ranged in price from \$3 to \$25 each, depending upon the size and variety of the stock.

For the next class, bare-root shade trees, it was found that in 100 planting jobs analyzed, the 427 trees used had an average retail value of \$3.49 per tree. It took 39 cents worth of peat moss per tree. The cost of labor to plant each tree was \$1.53, or forty-four per cent of the cost of the average tree. This does not include any staking or bracing materials generally used in the planting of larger sizes of shade trees, but does include the labor to install these materials. The shade trees ranged from \$1 to \$12.50 each in value.

In the bare-root shrubs class, a total of 1,020 shrubs were planted in the forty planting jobs used in this study. Each shrub had an average

value of 69 cents, and 7 cents worth of peat moss was used for planting on each. The cost of labor was 29 cents per shrub, or forty-two per cent of the retail value. This is just two per cent less, proportionately, than for bare-root shade trees. These shrubs ranged from 40 cents to \$1.75 each in retail value.

The data on planting bare-root rosebushes were gathered from thirty jobs done in the spring. The 357 roses used averaged 93 cents each in value. Twelve cents worth of peat moss was used on each rose planted, as against 7 cents worth on a bare-root shrub, for our crews are regularly instructed to use liberal amounts of peat moss when planting rosebushes. It cost 34 cents each in labor to plant the average rosebush, or thirty-six per cent of the cost of the plant. Cases were sampled, as nearly as possible, where no special ground or bed preparation was necessary.

Twenty cases were sampled where bare-root hedging was planted by the trenching method, and a total of 1,042 hedge plants were used. The data are based on the per ten rate. Thus, hedging valued at \$2.20 per ten cost \$1.54 per ten to plant, or seventy per cent of the cost of the hedging plants. Each unit of ten plants required 48 cents worth of peat moss.

Fifteen jobs were studied in the sixth class, that of field-grown perennials, which consisted of large, field-grown clumps, largely sold in our region, as well as some larger potted items and peony roots. As perennials are often quoted by the dozen to the landscape customer, this unit was used in the analysis. The fifty-six dozen used in the study were valued at \$5.41 per dozen. It

LANDSCAPING COSTS

Class of plant material	Type	Number of jobs used	Total plants used	Average retail value	Unit used	At \$2 per man hour		
						Labor to plant	Per cent of retail value	Peat moss per unit
Evergreens	B&B	200	1,430	\$ 6.18	Each	\$1.25	20	\$0.30
Shade Trees	BR	100	427	3.49	Each	1.53	44	.39
Shrubs	RR	40	1,020	.69	Each	.29	42	.07
Rosebushes	BR	30	357	.93	Each	.34	36	.12
Hedging	BR	20	1,042	2.20	10	1.54	70	.48
Perennials	Field	15	672	5.41	12	2.70	50	.60
Dutch bulbs		10	1,271	14.85	100	5.15	35	1.32

Figures compiled on landscaping costs based on 415 separate planting jobs done in 1948 and 1949 by the Kansas Landscape & Nursery Co., Salina, Kan.



Garden Shop Erected by Terre Haute Firm Commemorates Ninetieth Anniversary.

cost the customer \$2.70 per dozen for planting, or fifty per cent of the retail value. Each dozen perennials required 60 cents worth of peat moss.

The seventh and last group in our study is of hardy Dutch bulbs, which are planted when available, in the fall only. This type of job is probably of minor importance to landscape departments of most nurseries, and here, by necessity, special bed preparation was part of the planting operation. The 1,271 bulbs planted were valued at \$14.85 per 100 bulbs. They cost \$5.15 per 100 to plant, or thirty-five per cent of their value, and \$1.32 worth of peat moss was used for each 100 bulbs.

Kinds of Quotations.

In our own landscaping operations we favor what you might call individual price quotations rather than lump sum quotations to the customer. Except on small jobs where the minimum planting charge prevails, the cost of labor is generally expressed in one lump sum for the job. However, the value of each plant of specified size is listed separately.

By itemizing individual prices, it is possible to maintain frankness with the client. It also permits him to see at a glance how his planting estimate is made up and makes it easy for him to check with catalog prices. Also, with this method the customer can easily understand one-half price replacement charges on any item or any necessary changes or substitutions made in the planting schedule.

It was found that a number of landscape operators in our region favor to quite an extent the use of an over-all lump sum quotation to the customer, and this method does have its advantages. As we secure more substantial data from carefully recorded planting records, gain ex-

perience in planting techniques and make closer planting estimates, this method of quotation obviously becomes more valuable.

One of the advantages of the lump sum quotation is that it does away with long explanations to the customer, such as why a Canaert juniper costs \$20 and a Vanhoutte spiraea costs 50 cents. It also keeps attention away from prevailing high cost for planting crews and other labor. Another advantage is that it has the effect upon the client of making him value the high quality of the stock and planting services and of making him conceive of the planting as a whole, rather than all the details involved in doing the job and the amount of money he pays for each operation.

Sometimes it is customary for some operators to use a provision of the lump sum method as a bargaining concession to the customer. This is done when the customer objects to a planting schedule based on a regular man-hour labor rate and asks for a lump sum quotation. He can

[Continued on page 31.]

GARDEN SHOP HONORS NURSERY'S FOUNDING.

Readers of the Terre Haute Tribune, Terre Haute, Ind., found in the October 8 issue a one-page invitation to the opening of the garden shop that Haas Home Nurseries had constructed in commemoration of the firm's ninety years of service in the nursery business. Founded by Ed C. Haas and continued by his son, the late Harry Haas, the nurseries have been managed by Carl I. and Paul R. Haas since 1934. The policy dominating all business transactions has been to provide both proved merchandise and good service. The owners realized this policy could be especially beneficial to customers

who wanted to select their own garden materials and to do their own work; so the garden shop was publicized with emphasis on the idea that cash-and-carry purchases saved delivery costs for the firm and lower prices to be paid by the customers.

An especially modern style was employed by Wayne Weber, local architect, when he designed the building so that all nursery stock would have special display advantages. The two sides, the rear wall and much of the roof are made of wood lath, with steel frame supports. The front is of brick, with huge plate glass windows, so that fifty per cent of the sunlight reaches the plants at all times. A large display sign above the entrance reads "Haas Garden Shoppe." Neatly landscaped grounds and a driveway further emphasize the attractive building.

Inside, walks take customers to numerous varieties of hardy plants artistically displayed on tables that have waterproof tops. Along the sides of the interior are binlike beds filled with composted sawdust. Small shade trees, evergreens and shrubs are kept there. Complete selections of plants and shrubs shown in the place will be grown on the 30-acre tract of land at the Cloverland nursery which the firm maintains just northeast of Seelyville.

Garden supplies and tools have their own showroom within the building. In the center of the Haas Garden Shoppe is a small structure built to house garden merchandise. The firm also carries flagstone cut to size for walks and patios. Anything the gardener needs for his yard or garden he will find at the store, and those customers unable to do their own planting will be able to obtain the services of the landscaping department which is next door to the garden center.

Florida's Fourth Trade Meet

By John E. Florence

Two days were devoted to swapping and studying trade items and methods October 22 and 23 at the Orange Court hotel, Orlando, when the Florida Association of Nurserymen held its fourth annual trade meet in conjunction with the design school of the Florida State Florists' Association. M. J. Daetwyler, Daetwyler Nurseries, Orlando, has served as local chairman of the arrangements for the four consecutive years that the trade meet has been held. Among the numerous growers and nurserymen who were guests of the 400 members present were James Murdock, president of the Georgia State Florists' Association, and Charles F. Pennock, San Juan, Puerto Rico.

Directors of the florists' association sponsored a 12:30 luncheon Sunday in the lower lounge at the hotel. Among the florists present were Mrs. Bruce Powell, Miami, president of the Florida State Florists' Association; Charles F. Coffey, Jr., West Palm Beach, F. S. F. A. vice-president at large; T. D. Kaden, Jacksonville, president of the florists' group of the Florida State Florists' and Nurserymen's Association; Peggy Florence; John E. Florence, Orlando, F. S. F. A. secretary, and Ralph D. Thomas, Miami, F. S. F. A. treasurer. Nurserymen present included E. Tinsley Halter, Island Landscape Co., West Palm Beach, president of the nurserymen's group of the Florida State Florists' and Nurserymen's Association. Past presidents attend-

ing the luncheon were M. J. Daetwyler, Orlando; Calvin D. Kinsman, Miami; William A. Nipper, Tampa; Julie Thomas, Lake Worth, and Fred Wesemeyer, Fort Myers.

Mr. Halter presided over the forum held Sunday evening, and Harry Smith acted as moderator. Everyone participated in general discussions concerning nurserymen's and florists' trade practices. Major subjects included soil sterilization by fumigation and Parathion's effect upon plants and also upon workers spraying it. In general, everyone spoke in favor of using Parathion, and many advocated the use of gas masks to protect the workers.

Volck spray was recommended as a good control measure against red spiders and other mites. For best results one should use one-half of one per cent of Volck in proportion to water used in connection with Parathion when spraying for scales. The same percentage of the oil emulsion has been used successfully with Gamtox and Chlordane.

Ways to develop more hardy house plants were also emphasized. Some soft plants, such as philodendrons, are likely to become more delicate whenever heavy nitrogen fertilizer is used on them and not equiponderated with phosphate, potash and rare or trace elements.

Mrs. Powell presided at the opening session Monday evening and suggested that nurserymen produce more plants that would last longer after they were cut and that would

be good for floral designs. After Mrs. Powell's speech, Mr. Halter led a round-table discussion, with the main subject being foliage for floral designs that would be sturdy enough to survive shipment anywhere in the States.

Ways and means by which nursery inspection departments might obtain enough money to increase the general inspection service were debated. Existing laws now provide for the inspection of hardwood plants and orchids.

Many persons had suggestions to make apropos standardization of landscape plants within the state, and many lauded the standards set up by the American Association of Nurserymen. Although the Florida nurserymen have accepted all of those plant standards, many tropical items are not included in the A. A. N. list.

Nursery stock, house plants and miscellaneous supplies were among the hundreds of items displayed throughout the 2-day trade meet, and both nurserymen and florists willingly traded their specialties with one another.

Among the exhibitors were the Key Nursery, Osprey; Peter Pierson, Plymouth; M. B. Foster, Orlando Nurseries and Daetwyler Nurseries, all from Orlando; H. P. Mulford & Co. and Aldot Farms, both at Apopka; Stanley Maynard, Winter Park; Raymond C. Hogshead, North Miami; Watts Signs, Daytona Beach; Jones & Scully, Boas Box Co., Calvin



M. J. Daetwyler, J. E. Florence, E. T. Halter, Mrs. Bruce Powell, W. A. Nipper, T. D. Kaden and R. D. Thomas at Orlando

D. Kinsman and Flower Girls Nursery, all from Miami; Southern States Nursery Co., Macclenny; L. B. Mann, Lake Monroe; Glen St. Mary Nurseries, Glen St. Mary; Florida Nursery & Landscape Co., Leesburg, and Goochland Nurseries, Inc., Pembroke.

FLORIDA CHAPTER MEETS.

Members of the Florida chapter of the American Association of Nurserymen met at the Orange Court hotel, Orlando, for an all-day session September 30.

President George W. Pringle introduced John Wight, vice-president of the A. A. N., who spoke briefly about group insurance for nurserymen and also referred to the "Plant America" program of the A. A. N. Curtis H. Porterfield, ad-

min by Paul Lassiter and H. R. Carpenter. Mr. Lassiter, a well known insurance man in Florida and an officer of the insurance firm of Lassiter-Ware, Leesburg, which specializes in workmen's compensation policies, discussed safety measures. Mr. Carpenter is also associated with the Lassiter-Ware firm and is considered an authority on hospitalization, health, medical and similar types of insurance. After the insurance men's talks, Mr. Porterfield mentioned that the A. A. N. was working on a plan by which various kinds of group insurance expressly designed for nurserymen could be purchased through the Washington office of the association.

There had been no assessment of regular dues for members of the Florida chapter since its inception, early in 1949; so members voted

construction costs, it was decided to remove the equipment and materials stored in the packing shed to another building in the operational court, for the packing shed was well located for an off-the-road garden store building.

The building was repainted, and cutout signs were erected above the store door along with a cutout of the firm's symbol. Inside, display tables were made, and a wrapping counter was erected. To screen off the service portion of the store, large plywood panels four feet wide were erected in the form of a zigzag screen, and on these panels were displayed colored pictures of the plants offered for sale. Sawdust was used over the dirt floor satisfactorily. Occasionally during the season additional sawdust was applied to the floor. In the rear is a lean-to sash house, which served as a display room for potted and bedding plants.

In front of the large door is an open oval court for outdoor display beds and additional tables for seasonal plants. Beyond this is an enclosure, surrounded by large pine and spruce trees, for space for the lath covering.

The sketch shows the use of trees, 4-inch or larger, planted in huge pots to give an impressive "plant market" appearance to the area surrounding the garden store. In addition, smaller material in pots and cans is displayed to let the customers know that the nursery products can be easily carried away.

By the use of the existing building and facilities, the whole area was converted into a garden store and salesgrounds with little outlay of money. Much of the work was done, according to a plan made several years ago, at odd times as the men became available for the alterations to be undertaken.

Although the spring season at Niles started nearly a month later than usual, the opening announcement of this additional service brought a good deal of extra cash-and-carry business and much favorable comment. With plants conveniently packaged and ready to go, this adjunct to the landscape business seemed highly desirable, and more attention to this branch of the business will be given in the years to come.

RECENTLY started by G. H. Harmon and G. B. Graham, San Antonio, Tex., the Sunnyside Nursery will carry complete lines of nursery stock and garden supplies. It will include a salesyard.



Sketch of Garden Store Housed in Remodeled Packing Shed.

ministrative assistant of the A. A. N., discussed the make-up of trade associations in general and stressed the important part that a national association plays in coordinating the efforts of individuals in the same industry.

Howard P. Quadland, public relations director of the A. A. N., elaborated on the proper procedure for the chapter to follow in organizing the "Plant America" program in Florida. He said, "In landscaping, stress not only appearance but comfort. Nature and beauty must compete with the age of mechanical gadgets." In advocating that nurserymen adopt the enthusiastic approach in all of their selling tactics and in all of their customer relations, he concluded, "'Plant America' can be a crusade, not just a slogan."

President Pringle appointed a contact committee of three, consisting of Fuller Tresca, Peter Shoemaker and W. C. Pearce, to enlist the aid of civic organizations and state and county officials in furthering and publicizing the "Plant America" program.

Informative talks on different phases of group insurance were given

by Paul Lassiter and H. R. Carpenter. Mr. Lassiter, a well known insurance man in Florida and an officer of the insurance firm of Lassiter-Ware, Leesburg, which specializes in workmen's compensation policies, discussed safety measures. Mr. Carpenter is also associated with the Lassiter-Ware firm and is considered an authority on hospitalization, health, medical and similar types of insurance. After the insurance men's talks, Mr. Porterfield mentioned that the A. A. N. was working on a plan by which various kinds of group insurance expressly designed for nurserymen could be purchased through the Washington office of the association.

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G. L. Taber, Jr., Sec'y.

REMDEL PACKING SHED.

Ever since the competition on designs for nursery sales and display grounds was conducted by the National Landscape Nurserymen's Association and the American Nurseryman in 1946, M. J. Hunziker & Sons, Niles, Mich., have been interested in establishing some sort of garden store in connection with the firm's active landscape business. It was not until last winter that the final steps were taken to open the store for spring. Previously stock had been displayed in "ready-to-go" beds for several years. Enlarged parking facilities already had been established close to the building before used as a packing shed, which was made into a garden store.

At first it seemed desirable to erect a new building, but, with high con-

Pointers on Propagation

By James S. Wells

METHODS FOR THE SMALL GROWER.

In looking through past articles, it seems to me that we have been considering methods of propagation more suited to the large producer and have omitted to discuss ways and means whereby the small grower could produce a moderate quantity of material for his own use.

The propagation of most types of general nursery stock falls naturally into one of three groups—by seeds, by cuttings or by grafts—and all three of these methods can and should be used by the small nurseryman. Let us briefly consider each of these methods and discuss in detail how the grower can propagate moderate quantities of plant material with the minimum of time and equipment.

Our methods of propagating plants, and the equipment we may need successfully to carry out the job, are all directed to one end, namely to control as closely as possible the conditions immediately surrounding the plant material with which we are working. In the word "control" is the essence of plant propagation, and our skill and success as plant propagators will largely depend upon the accuracy of the control and the adjustment of conditions to come as closely as possible to those naturally required by the plant. This control, about which we have spoken in pre-

vious articles, can be provided in the simplest of ways, such as by covering a seedbed with a mulch of hay or straw through the winter to prevent drying out and to protect the dormant seeds from excessive extremes of weather, or it can be the more highly specialized and complicated equipment involved in humidity control in a heated greenhouse. Both practices are, however, aimed at the same thing, which is control of the atmospheric and soil conditions immediately around the material being grown.

The simplest and, at the same time, most satisfactory equipment for the small grower is a series of well built coldframes. The number will largely depend upon individual requirements. One good frame, 6x30 feet, can produce an astonishing quantity of young lining-out stock in different kinds with careful management and intelligent use on the part of the operator. If, on the other hand, you wish to produce a wide variety of plant material which will involve propagation by all of the three methods named before, then you will need more than one frame.

The frames should be constructed of sound lumber not less than one and one-half inches thick, and the sides should be sunk into the ground at least six inches. All the lumber should be pretreated with Cuprinol before being used. The back of the frame should be about eighteen

inches high and the front of the frame about twelve inches high, giving a drop of six inches in the 6-foot width. The ends should be constructed separately, so that they can be removed to allow for mechanical cultivation if a rotary tiller or rotary hoe is available. The rail supporting the sash should be fixed to the front and back of the frame at least two inches from the top, so that when the sash is placed in position the front and back boards come to the top of the sash, thus reducing drafts to the minimum.

The location of such a propagating frame is quite an important factor. Choose a sheltered spot adequately protected from prevailing winds and fix the frames so that they slope from north to south. Light-filtered shade is desirable, but not essential, because this can be provided artificially as required. It should not be necessary to emphasize the importance of sound, well constructed sash to complete the propagating unit. Glass should be securely fixed with putty or caulking compound; and the frames should be sturdy and square. Strips of lumber can be inserted into slots as the frame is filled up, so that the join between the sash is covered beneath to take off water which may drain through, thus reducing drip and drafts to the minimum. These strips should be removable to allow for ease in working and cultivating.

Having constructed our propagating frame, how should it be used? Let us consider first propagating plants from seeds.

It is surprising the number of really first-class nursery plants which can be grown from seeds, and although the large propagating nursery will be carrying on this work all the time, I feel that the opportunities which exist for the small grower to grow moderate quantities of first-class plant material in this way are, in many instances, neglected. Practically all of the ericaceous material can be grown from seeds. Azaleas can be so produced, especially the mollis and Ghent hybrids, as well as the hardy kaempferi types. Rhododendrons, too, can be propagated in this way, and although it will be necessary to have a small quantity of named varieties produced either from cuttings or from grafts, it is still sound practice to have a block of hybrid seedlings coming on to sell to those customers who perhaps cannot afford the high prices demanded for the grafts. *Pieris japonica*, *Viburnum carlesi*, *Daphne mezereum*, *Ilex opaca*, *Franklinia alatamaha* and a host of others far too numerous

[Continued on page 60.]



Putting in *Buxus Suffruticosa* Cuttings.



CHARLIE CHESTNUT

HITTING THE HIGH SPOTS



Dear Mr. White:

Probably from time to time you get some of the members writing in for what they should do when their local civic clubs, garden clubs, church guilds, etc., want a free talk. Me and Emil spent the best part of a week working over a talk for the Civic Club here in Riverbend, and then at the last minute they discovered that Emil hadn't paid his dues for last year, and there was quite a fuss about it. The upshot of it was that Emil flew off the handle and, instead of Emil giving his talk, they had Geo. Burns from the condensed milk factory give a talk on how to cook milk, which I heard was about as lousy a talk as they ever had at the Civic Club. This ain't sour grapes either Mr. White, because everybody knows all you do is cook up the milk and put it in a can. Thats all there is to it. There aint no chance to make a talk about that. But with the nursery business, a person can go to work and make quite a talk on different stuff as you know.

But I am getting a little ahead of myself. Me and Emil was talking it over and Emil suggested I should send the outline of the talk to the Washington, D. C. office, so you could go over it and send it out to different members which was up against it for talks.

Of course I shouldnt mention it to the other members, but Emil was wondering if you would consider this a good contribution to the other members, maybe you would put him on a committee or else fix it so he would be a delegate to the convention. That aint nothing to me you understand one way or the other, but it occurred to me Emil might be a good member to have on the exhibits. He might be able to get Mr. Morse at the windmill works to set up one of his windmills. Its got to be a good high ceiling, Morse says, otherwise he aint interested.

Well, you work Emil in if you can, as he aint been to a convention since before the war, and he is getting out of touch with the other members.

But to get back to the talk we worked up, Ill tell you how we got some of our ideas together. It aint easy. In the first place we started off

wrong. Emil didnt want to bother to start the fire at the office, so he sat there with his corncob pipe going and his ear flappers down and I had to keep my gloves on to take notes. That aint no way to start on a talk as you know.

"Better start off with a few startling figures," Emil says, "like if all the nursery stock was laid end to end, it would reach from South Bend to Billings, Montana, or some other far away place. Figures always goes good to start off with a talk," Emil says.

"There aint nothing startling about that," I says. "In the first place they dont lay nursery stock down, they stand it generally up in the air, in which case—"

"Wait until I do a little figuring," Emil says, "you take the stuff right here in this nursery, you take that block of shade trees there by the railroad track, 3000 in that block, average 20 feet would be," says Emil working with his pencil, "why that would reach to Lake Park and half way back, thats 12 miles."

"To me it dont seem like no point to that kind of a start," I says, "you got to get off to a different start somehow. How would it be if you want to give figures, that we should go to work and tell how many honeysuckle is turned out every year by the members all over the country," I says.

"No, dont take honeysuckle Chas." he says, "I dont want anybody to get the idea how big an item that is. Some of the smart ones might take a notion to give me a run. I got to protect my reputation as the Honeysuckle King."

"Couldnt we just start off by saying the nursery business is one of the largest industries in the country?" Emil says.

"That sounds good," I says, "but as a matter of fact it ranks about 455th down the line, just in between brass balls for church steeples and manufactures of whitewash brushes. Better not stir up any argument at all in regards to where we stand," I says. "Just get going on the main meat of the talk without any startling facts," I says.

Emil was disappointed with that idea, but he let it go. "O. K." Emil

says, "then just put down that everybody should have a landscape job because—and then list all the reasons out. You do that while I go out and shut off the windmill."

He was gone half an hour, greasing the windmill and feeding the horse Victoria. When he come back he says, "Read what you got down there, Chas."

"Aint got nothing so far," I says, "we was just getting ideas together," I says.

"Begin all over again, Chas," he says, "rub out whatever you got down. We should start out with Ladies and Gents of the Civic Club. Put that down," Emil says.

"In the first place there aint never any ladies at the Civic Club and in the second place there aint any gentlemen either. Just start off Fellow Members of the Civic Club and then go on from there," I says.

"Now you heard some talks aint you, Chas." Emil started. "What do they start with? They always start off with a funny story or two. Good thing I thought of that. Lets see what was that story that Steamboat Fulton was telling the other day about the farmers daughter and the traveling salesman," Emil says, "that was a good one."

"You couldn't tell that one, Emil," I says, "Rev. Holmes will be there and besides the other members have all been in Steamboat's bar and heard the story four or five times already. Couldnt we put in the story about that old lady that come in here last fall asking for the Watery Anthony Spirea?"

"That just shows how dumb people are. You couldnt make no story about that. The members would see no point to it." Emil says. "Just put down 'funny story' and leave a blank space so we can fill it in later. Now whats next?" Emil says.

"Whats the name of your talk" I says, "we should make the name fit the talk or vica verca. Otherwise we cant get no place. What have you got in mind for the name of the talk?" I says.

"That reminds me I got a book over to the house," Emil says, "dont know why I didnt think of that before, its one I got years ago, when I

[Continued on page 43.]

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This is a hybrid hinodegiri and our own introduction. We have been growing it for several years in our nursery where it has attracted much attention. Foliage about the size and gloss of the Hinodegiri Crimson Azalea but the plant is hardier. Flowers are a clear lavender with speckled throat.
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A magnificent azalea. Compact, dwarf and evergreen. Foliage so glossy it shines, bright green turning in cold weather to fiery red. Better foliage than Azalea hinodegiri from which it was hybridized. Flowers in such abundance that the foliage is almost entirely hidden and of the most brilliant blood-red imaginable.
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COTONEASTER PARNEYI (Parney Cotoneaster).

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ERICA MEDITERRANEA HYBRIDA (Darley Heath).

This is one of the most attractive and desirable plants in its class grown in our nursery. Being a winter bloomer, hardy, equally good for rockeries, borders, groups and masses, it should be included in every planting.
6 to 9 inches, twice transplanted specimens, BR 3.50 32.00 283.00

GAULTHERIA PROCUMBENS (Wintergreen).

This is the little plant which produces the true wintergreen flavor and from which wintergreen oil is extracted. The fine foliage, the small, delicate, pink, bell-shaped flowers, the brilliant red berries and its hardness combine to make it one without peer in its class.
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JUNIPERUS CHINENSIS SARGENTI

(Sargent Juniper).

This juniper has been well proven as it has been grown in American gardens for more than fifty years. It was first introduced into the Arnold Arboretum from Japan by Prof. Sargent in 1892.
6 to 9 inches, once transplanted 15.00 120.00

JUNIPERUS CONFERTA (Shore Juniper).

A low creeping juniper with dense, bright green foliage. Makes a heavy matted ground cover 6 inches high. A decidedly pleasing effect. Holds its vivid green color the year-around. Very hardy.
3 to 6 inches, once transplanted 12.00 96.00

JUNIPERUS HORIZONTALIS

(Bar Harbor Blue Creeping Juniper).

Procumbent with trailing, spreading branches well filled with foliage, forming a compact mat in mature plants. Foliage is charming steel-blue the year around.
6 to 9 inches, once transplanted 15.00 120.00

JUNIPERUS HORIZONTALIS

(Bar Harbor Green Creeping Juniper).

This is a lovely green form of the above. During the winter months the foliage turns to a rich bronze. Procumbent and trailing. Each 10 100 1000
6 to 9 inches, once transplanted \$15.00 \$120.00

JUNIPERUS HORIZONTALIS PLUMOSA

(Andorra Juniper).

One of the more recent introductions in creeping junipers. It grows close to the ground but the tips of the branches lift up to a height of about 18 inches.
6 to 9 inches, once transplanted 15.00 120.00

JUNIPERUS SABINA VARIEGATA

(Hoarfrost Savin Juniper).

Semiprostrate juniper having a delicate variegation throughout giving it the appearance of having been sprinkled with frost. Hardy and rare. An exceedingly attractive variety.
3 to 6 inches, once transplanted 15.00 120.00

JUNIPERUS SCOPULORUM (Rocky Mountain Juniper).

The well known and justly popular western juniper. A very hardy tree with a range from British Columbia to Colorado in the Rocky mountains. Thrives in cold or hot and dry sections.
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JUNIPERUS VIRGINIANA TRIPARTITA

(Fountain Juniper).

The name describes fairly well the form of growth, it being semiupright but spreading.
3 to 6 inches, once transplanted 15.00 120.00

KALMIA LATIFOLIA (Mountain Laurel).

Native of the Appalachian mountains. Grows into compact, symmetrical shrub, densely covered with foliage. When in bloom the plants are literally bouquets of lovely, cup-shaped flowers.
9 to 12 inches, once transplanted 24.00 192.00

MAHONIA AQUIFOLIUM (Oregon Grape).

An ornate little evergreen shrub, native of Oregon, where it is much loved and enjoyed. Leaves are hollylike and bright green. Has long clusters of bright golden-yellow flowers in the spring.
3 to 6 inches, once transplanted 9.00 72.00

NANDINA DOMESTICA (Nandina).

A native of the Orient. Characterized by delicate foliage, the long slender leaves being frondlike. It bears large clusters of bright red berries.
9 to 12 inches, once transplanted 15.00 120.00

PICEA PUNGENS GLAUCA (Colorado Spruce).

Native Wyoming to Colorado and Utah. The color effect ranges from green to silvery-blue. A very handsome and a very hardy tree.
6 to 9 inches, once transplanted 14.00 112.00

PINUS ARISTATA (Bristlecone Pine).

Slow growing and rather dwarf. A handsome low shrub with a picturesque and irregular habit of growth.
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RHODODENDRON MACROPHYLLUM

(Coast Rhododendron).

A hardy rhododendron, native of the Coast and Cascade mountains of Oregon, Washington and British Columbia. It has full fine foliage. Flower trusses are showy red in the bud opening in a range of shades from delicate to deep pink.
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TAXUS BACCATA (English Yew).

This is the old favorite of English gardens. Native of Europe and North Africa to the Himalayas. Deep green, rapid growing in good soil, very dense. The trees make uniform growth all along the line regardless of sun or shade. Hardy evergreen.
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Selecting Parent Stock of Holly

By T. J. Dilatush

Selection of poor parent trees from which to obtain cuttings of holly is, in a sense, criminal. If we propagate thousands of cuttings from a holly tree that is below average in foliage and bearing habits, we shall, without a doubt, be placing poor hollies in thousands of home grounds. It is not good business.

Named varieties of holly on the market today were selected for a surprising number of reasons. Some were picked after much careful comparison; others merely because they were handy to obtain.

The purpose of this article is not to find fault, because, as is said, to judge is to be judged—and perhaps I do not wish to be judged. What I would like to do, to the best of my ability, is to point out the faults that a holly tree can have through heredity. It is surprising in a given hundred seedlings how many are very poor and how many are very good. I think that few other evergreens show such wide variation.

If a person plants 100 holly seeds, at least some of them will make fine, superior trees, but if he buys 100 cuttings from a poor holly, every single one of them will be poor. The responsibility is plain and outright in the hands of every man who propagates.

In every holly berry there are several seeds. If conditions are right in the wild, several young trees, each from a different seed, will sprout in a single clump. In several of our large plantings there are such clumps. Generally they are ten feet in height and consist of two distinct trees from two separate seeds within the same original berry. All are well fed; that is to say, conditions are the same for all, unlike in the wild. In several cases, in late winter, the section of a holly clump from one seed will shed its foliage completely, while the other section, from another seed, will remain attractively green, shedding only its old inner leaves. In one remarkably distinct case, the section from one seed has glossy dark green leaves, while the other section has dull light green leaves.

As a cross check or control on the above, a hedge was grown from cuttings taken from such a clump. The trees, now some 6 years old, clearly show in late winter the above observations. One arm of the hedge sheds foliage completely in late win-

ter and is a light green. The other arm of the hedge retains its normal foliage through the winter and is a dark, glossy green.

Some trees in our oldest field develop a late winter bronze-brown cast to the foliage; others, a purplish cast over the green. Both are, to most people, unattractive.

When the first rooted cuttings were selected in this nursery, some twenty years ago, especial care was taken to avoid these faults. Only parent trees known in the neighborhood as consistent bearers (cut steadily for Christmas) were used. Personal observation was made for several years as to the attractiveness of foliage and berry.

The resultant several dozen varieties represented at present in 8-foot to 10-foot trees are fine bearers. But a certain percentage of them have a light green cast to the foliage, and there are some whose berries fade to an unattractive dirty orange not long after New Year's. Two strains develop a dull red cast to the berry in late winter; this is unattractive, for it does not contrast. There were two reasons for these developments. One was that the parent trees were in home yards, in open pastures, in cleared woodland or on mountain slopes. They were never fed nor cared for. When the cuttings were taken, all the parent trees were of a generally light green color. In the nursery, with proper feeding and care, the better ones shone out with glossy foliage, while the poorer ones remained light green. Nowadays, in selecting prospective parents, we heavily feed the trees, wherever they may be, to bring them up to par, so that we may compare them to known good strains. The second cause of fault (that of off-color, late-season berries) was the fact that the foliage had been heavily cut from the parents at Christmas each year, and, while the parents were checked for late-season winter leaf discoloration, little thought was given to the color of the berries at the time, few being left on the trees.

Just before the last world war an attempt was made to use the knowledge gained from the preceding studies in an effort to produce still better strains without the faults mentioned. Everything went fine except that a whole new crop of faults

came into recognition. Among a dozen varieties originally planted on three acres, only five were fully successful. The others? Well, one thing that was immediately apparent after a few years was that some were going to grow like bean poles and others like pincushions. This never dawned on us before, but some varieties were actually too slow growing to be commercially successful, some not making over two feet in ten years. Others in the bean pole class were just not salable when young, and, therefore impractical for wholesale, landscape, retail or anything else unless you found a chap who just happened to like bean poles. Then one other headache developed. On one of the most promising trees, it turned out, the foliage hid practically every berry. The parent tree fooled us. It was a big thing, some twelve feet above my head, and, as I looked up at it, it was just a red mass of berries. But, so help me, when I climbed a ladder and looked down at it, I could hardly see a berry. And that is what you do to young plants, look down on them. How, in our present work, are we to determine which are going to be bean poles and which are going to be stunted? That is a problem which sometimes requires the growing of cuttings for a few years to find an answer.

Various factors enter into consideration. All young trees seek the sun when in a woods. A slow-growing holly thus will grow tall in seeking the sun and will be deceptive in appearance. By the same token, the fast-growing types will be indistinguishable from the slow.

In the nursery row, seedlings will present an enigma if they have been constantly pruned, as the lanky ones will have thickened up and will not be especially different from the naturally dense ones. If the nursery-grown trees are underfed, all the foliage will be of a light color, and it will be nearly impossible to judge the better trees. Perhaps the best method is to select a few dozen of the better bearers, bring them home and feed them into top-notch condition so a comparison can be made.

In making selections from the wild or in the nursery row, it is essential that all of the stock to be compared be fed into equal good health. Full sunlight should also be equal on all

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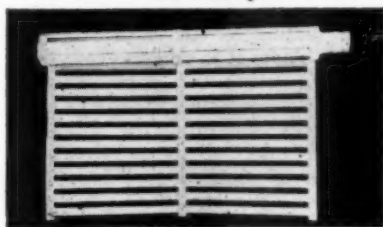
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to be judged, for shade enhances the color and appearance of the foliage. If stock is underfed in the nursery row, occasionally an exceptionally glossy-leaved variety will show up in better condition than the average, but many good types will be indistinguishable from the poor.

If for no other reason than to improve the plantings of the nation, care should be taken in selecting *Ilex opaca* stock. However, fortunately for the industry, the financial rewards of good selection are worth while. Better crops of berries and a dark glossy foliage will sell holly right under the nose of the neighbor with underfed or poor parentage stock. Try it; there is a challenge to growing holly today.

OPENING of a garden store and bulb house was recently announced by Wickham's, Odessa, N. Y.

PRAISING the practical and individual character of J. H. Burton's self-service garden center, at Hyattsville, Md., was a 2-page article, "It Serves You Right to Serve Yourself," published in the October issue of the Maryland Gardener magazine. The Burton garden center was described in the American Nurseryman for October 15.

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Plant Notes Here and There

By C. W. Wood

Despite the fact that America is full of monkey flowers, it usually takes a lot of searching to find even one listed in catalogs. It is easy to understand why gardeners on dry soil do not enthuse over monkey flowers, but it is not easy to account for their absence from gardens where an abundance of water is available. Lack of hardiness in some of the more spectacular kinds is often given as the reason for their absence in the north, although it does not apply to all.

The foregoing remarks apply with special emphasis to the pretty little westerner, *Mimulus primuloides*, which grows along streams and in moist meadows in the mountains from Washington to southern California. There it is said to grow two or three inches tall, displaying its golden flowers, usually with crimson dots, from June until frost time. In the east it does all that, except that it grows up to six inches in height in lowland gardens. It will do that, too, in any cool situation that is constantly moist, or, in the absence of that, in a pan of spongy soil in a shaded frame where its moisture needs are under control. The plant is not smothered under flowers throughout that long period, of course, although it often is, because flowering stems spring from each leaf axil.

Some of the material that has been in my garden in northern Michigan has not been hardy, and I long thought that none of it was, for I invariably lost the plants that were left in the open. Losing it during the winter may come, however, from a misunderstanding of the plant, as has happened here. It dies back to a dormant bud at the approach of winter, and these buds, apparently without roots during the resting stage, can easily be lost between fall and spring. If these dormant buds were wintered on moist moss in a protected frame, there would be less cause for complaints on that score.

Aquilegia Suaveolens.

The name "*suaveolens*" (sweet scented) always has a special attraction for gardeners who make use of their noses as well as their eyes. That has always been the case with me, at least, and ever since *Aquilegia suaveolens* was casually mentioned in this column several years ago, responses have indicated that it applies to

others as well. Parenthetically, it may be said that readers of the American Nurseryman must hold on to their copies, because one response to the note on this columbine, published eight years ago, reached me less than two weeks ago.

When seeds of the plant reached me years ago, the notation, "from the Himalayas," was not assuring, because few plants from that region are hardy in northern Michigan. So I was not greatly disappointed when it died during its second winter. Nor was I disappointed in its fragrance, which was suggestive of a luscious ripe peach. The flower has more than fragrance to recommend itself to gardeners, too, for its pale yellow color is both attractive and usable in gardens, and its shape, like that of all columbines, makes it a choice offering for rock garden and forward positions in the border. Unfortunately *A. suaveolens* is not often offered; so it may take a little searching to locate a source of seeds. Where hardy, it should do well in a light, leafy soil in light shade.

Some Thoughts on Green.

It has always interested me to watch the reaction of gardeners to green flowers. It is fortunate, I suppose, that we do not have many in the green class, because, generally speaking, gardeners seldom evince

much interest in them. On the other hand, users of cut flowers seem to belong to another division of the human race, for they consume a vast quantity of dyed flowers, as witness the traffic in green carnations at St. Patrick's day. Why one group should favor green flowers and the other object to them, or at least ignore them, is not easy to explain. Jason Hill, in "Curious Flowers," tried to account for the gardener's dislike by assuring that "we admire flowers chiefly because they are not green," so "it is natural that green flowers should fail to wake much enthusiasm, and particularly because greenness in flowers is often part of a general policy of self-effacement which is entirely out of place in a garden plant." Be that as it may, the fact remains that some of us do like green flowers and many others might if they were shown attractive ones.

I doubt, for instance, if many plant lovers could resist the little northwestern miterwort, *Mitella caulescens*, if they saw it growing in a generous mass in a shady situation in your show grounds. They would surely admire the tufts of pretty green leaves, and I doubt if many could resist the fringed, green flowers. And no one who gardens with his nose would want to forego the pleasure of miterwort's rich clove scent. The plant grows quite easily in leafy soil

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which does not become desert-dry, and I suspect from its behavior here that it would be most permanent in soil of neutral or slightly acid reaction.

After a few writers have said of a plant that it has a flower of "strange beauty" or that it is "curiously pretty," gardeners are likely to pass it by as of little account. Perhaps that is what happened to the Siberian columbine, *Aquilegia viridiflora*. Anyway, one seldom sees it in gardens. This is one of the medium-tall columbines, seldom exceeding fifteen inches in height. Like most of its kind, it did best here in light shade. Practically all the references I find to it in literature have been made by English writers, who invariably speak of *A. viridiflora* as being impermanent, as when one writer refers to it as "a typically rare and precious plant, an impression that seems likely to be maintained, for it is a difficult plant to keep." Experience here shows that it is about as long-lived as the Rocky Mountain columbine, *A. coerulea*, and most gardeners do considerable fussing to keep the latter going in their gardens.

Because *Helleborus corsicus* is a little too tender for the severe climate of northern Michigan, I cannot speak of it from long association. It is, however, a pretty thing, especially as a cut flower where artificial light can bring out a brilliance not apparent in the open. The soft green flowers in spring, on stems to three feet or perhaps more in height, would make charming pictures where hardy. Another green hellebore, *H. viridis*, is spoken of in literature, but I know little about it.

Micromeria.

Micromeria is a sweet-smelling tribe, all too seldom seen in gardens. It is true that many of them, especially the little subshrubs from the Mediterranean regions, are a little too tender for my cold climate, but even in most of these cases, the roots live over under the snow, making an even more twiggy plant than would otherwise be the case. There are sixty or more species, though some are set aside in *satureia* by some authorities. All that I know are attractive and fragrant.

None has a really showy flower. The bright pink of *M. filiformis* is most entrancing, and the lavender-spotted white of *M. rupestris* is far from being without merit. Their fortunes, however, lie in their intensely pleasing fragrance. It does not take crushing of the leaves to release the scent, as it does in many plants, or to fill the air with it; a mere brush-

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Retinospora, in variety
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ing of the foliage does that. They are, therefore, pleasant plants to have along the garden path, where each person's passing fills the air with perfume. That is especially true of the little shrublets. They all require sunshine, good drainage in light soil (no rich manures, please) and, in northern sections, a sheltered spot. All are easily grown from seeds, many from divisions and all from cuttings of new growths in spring and, no doubt, at other times.

Where micromeria leaves off and satureia commences is not for me to say. All I can do is to believe the labels. I know that both plants are practically all sweet-smelling and that I shall enjoy having them around, even to the little annual summer savory. The savories, in addition to their fragrance, also have a late summer-flowering period as a recommendation. Micromeris usually commence a little earlier. Any that one finds, be it micromeria or satureia, will likely be worth growing. And they all do well in gravelly soil in full sun.

Alchemilla.

Talking about green in the preceding paragraphs reminds me of another group, the lady's-mantle, which deserves the attention of all lovers of pretty foliage. Most plants grown especially for their flowers have a more or less short period of beauty, and the remainder of the year the gardener has to contrive in some way to hide unsightly foliage or bare places left by the derelicts; yet we must have flower color to produce bright effects. The trouble is that we put too much stress on flower color and not enough on green color and beautiful foliage.

Alchemilla is noted for its lovely leaves and lack of showy flowers. The books talk of thirty or more species, though many of them are tropical and, consequently, are of no interest to the grower of hardy plants. A few have appeared in the temperate regions.

Of these, *A. alpina* is usually readily available. It is an attractive little thing, with 5 to 7-lobed leaves, silky above and silver beneath. It is lovely in most associations in sun or light shade and is especially useful planted along a path, where its beautiful foliage can be enjoyed throughout the growing year. Another species, *A. grandiflora*, not quite so well known, but just as deserving, should also be planted where its lovely leaves, as much as four inches across on good specimens and

GRAFTED STOCK For Spring, 1951, Delivery

	Per 10	Per 100		Per 10	Per 100
<i>Acer palmatum atropurpureum</i>	\$7.00	\$65.00	<i>Magnolia stellata rosea</i>	\$6.50	\$60.00
<i>Acer palmatum dissectum atropurpureum</i>	7.00	65.00	<i>Magnolia stellata rubra</i>	7.00	65.00
<i>Cornus florida alba plena</i>	5.00	45.00	<i>Magnolia stellata, Water Lily</i>	6.50	60.00
<i>Cornus florida rubra</i>	5.00	45.00	<i>Magnolia rustica rubra</i>	7.00	65.00
<i>Cornus florida rubra Prosser</i>	7.00	65.00	<i>Thuja occidentalis douglasii (spiralis)</i>	4.50	40.00
<i>Fagus sylvatica riversii</i>	7.00	65.00	<i>Thuja occidentalis elegantissima</i>	4.50	40.00
<i>Ilex opaca femina</i>	5.00	45.00	<i>Thuja occidentalis lutea, Mary Corey</i>	4.50	40.00
<i>Juniperus chinensis columnaris glauca</i>	5.00	45.00	<i>Thuja occidentalis lutea, George Peabody</i>	4.50	40.00
<i>Juniperus chinensis columnaris viridis</i>	5.00	45.00	<i>Thuja occidentalis nigra</i>	4.50	40.00
<i>Juniperus chinensis keteleeri</i>	5.00	45.00	<i>Thuja occidentalis pyramidalis</i>	4.50	40.00
<i>Juniperus chinensis neoboriensis</i>	5.00	45.00	<i>Thuja occidentalis rosenthalii</i>	4.50	40.00
<i>Juniperus chinensis sargentii</i>	5.00	45.00	<i>Thuja occidentalis wareana (sibirica)</i>	4.50	40.00
<i>Juniperus chinensis sargentii glauca</i>	5.00	45.00	<i>Thuja orientalis aurea nana</i>	4.00	35.00
<i>Juniperus chinensis meyeri</i>	5.00	45.00	<i>Thuja orientalis conspicua</i>	4.00	35.00
<i>Juniperus virginiana burki</i>	5.00	45.00	<i>Thuja orientalis elegantissima</i>	4.00	35.00
<i>Juniperus virginiana canaerti</i>	5.00	45.00	<i>Tsuga canadensis pendula</i>	5.50	50.00
<i>Juniperus virginiana elegantissima</i>	5.00	45.00	<i>Tsuga canadensis pendula, 1-yr. grafts</i>	7.00	65.00
<i>Juniperus virginiana glauca</i>	5.00	45.00			
<i>Juniperus virginiana globosa</i>	5.00	45.00			
<i>Juniperus virginiana kosteriana</i>	5.00	45.00			
<i>Juniperus virginiana schottii</i>	5.00	45.00			
<i>Juniperus virginiana pyramidaformis hillii</i>	5.00	45.00			
<i>Juniperus sabina Von Ehron</i>	5.00	45.00			
<i>Magnolia lennei</i>	7.00	65.00			
<i>Magnolia soulangeana</i>	6.50	60.00			
<i>Magnolia soulangeana nigra</i>	6.50	60.00			
<i>Magnolia stellata</i>	6.50	60.00			

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<i>Magnolia soulangeana</i>	\$8.00	\$75.00
<i>Magnolia soulangeana nigra</i>	8.00	75.00
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Prices are F.O.B. Mountain View, N. J., packing additional at cost. Usual terms to those of established credit. No goods sent C.O.D. unless 25 per cent of amount is sent with order. All this material is listed subject to prior sale and crop conditions.

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covered with fine silky hairs, can be admired without too much searching.

Knot Gardens.

It is not apparent from literature when knot gardening came upon the scene, although it must have been sometime after the crusades when knot gardening reached England. The system probably was an outgrowth of the mazes and labyrinths of earlier times—back to the fourth and fifth centuries, A. D., at least, according to the records—in which the lord of the manor could hide himself from his irate wife if occasion demanded. All three fancies, mazes, labyrinths and knots, later fell into disrepute and were rarely seen after naturalistic gardening became the vogue. I have noticed, however, that knot gardening has, commencing during World War II when everyone grew vegetables, been receiving the attention of amateurs.

There is not room here to go into the matter at length, and perhaps that is not necessary, because most of the old-time authorities on knots were in agreement with Lawson in 1626 when he wrote: "The number of formes, mazes and knots is so great, and men so diversely delighted, that I leave every housewife to her self." As a consequence, each gar-

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6 to 10 ins., grafts (1-yr.).....	\$60.00
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dener followed his own ideas in form and design, although it is said that the earliest ones were copied from pavements of the churches in the Holy Land. At the present time, knots are used most to add distinction and beauty to the kitchen garden. It should be said, though, that design needs your careful attention. First you must obtain careful measurements of the area to be covered by the knot and then an exact layout on paper, using an easily figured scale, such as two feet to one inch.

Although many of the plants formerly used in knot gardens are no longer available and others are not hardy in the northern states, we still have a wide selection. I notice that present-day practitioners of the art favor use of culinary herbs for their knots, generally using one kind of plant for each line. For a permanent knot, I notice that the following plants are most frequently used now: Germander, or teucrium; hyssop, or hyssopus; lavender cotton, or santolina; lavender, or lavandula; Thymus vulgaris, and sweet violets, Viola odorata. For knots to be planted annually, the following seem to be favored: Basil, parsley, peppermint and other herbs which are either fairly low-growing or can be kept in bounds by shearing.

MISNAMED POLYGONUM.

In the fifth, or current, edition of the Plant Buyers Guide appears the name Polygonum "reynoutria." The quotation marks, according to the preface, signify an uncertainty of status. Since the entity designated by this name is an attractive red-fruited polygonum which appears to be gaining popularity in plantings throughout the country, it seems that a clear-cut designation should be given to it. With this in mind, a checkup on the literature shows the following results:

The plant is a red-fruited variation of Polygonum cuspidatum, one of the Oriental polygonums, and was recognized as early as 1909 by R. de Noter as Polygonum cuspidatum S. & Z. var. spectabilis in Revue Hort. Belge 35: 232, fig. 1909. As far as is known, this is the first name actually given to this variety. However, the variation was recognized as early as 1874, but without name, since it was unmistakably illustrated in color in the Japanese publication, Somoku Dzusetsu, ed. Makino, 7: t. 76, 1874, as Polygonum cuspidatum var.

In 1910, Makino, in a later edition of the same Japanese publication, illustrated the variety again,

this time giving it the name *Polygonum Reynoutria* forma *colorans*. However, it should be noted that this last-mentioned name was antedated one year by that of De Noter.

It may be that the name "reynoutria" can be traced back to the persistence of the Japanese botanists to retain this name regardless of botanical rules.

There are no grounds for the retention of the name "reynoutria" since two of the better recognized authorities (Danser and Steward) of the polygonaceae—and most botanists—regard *P. reynoutria* as synonymous with *P. cuspidatum*.

Consequently, the polygonum now widely grown under the name of *P. reynoutria* (under two and one-half feet in height, with white flowers in the early fall closely followed by bright red fruits) is incorrectly named and should be termed, instead, *Polygonum cuspidatum spectabilis*, actually a dwarf variety of the taller-growing and very common *Polygonum cuspidatum*.

Clarence E. Kobuski,
Curator of the Herbarium,
Arnold Arboretum,
Jamaica Plain, Mass.

PICTURE WINDOW POEM.

You can never tell where poetry will break out. Recently while landscaping an awful modern house, the following lines popped into my head. The thought seems to me so timely that you might like to publish it. My brain child is entitled:

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I wanted a modern dwelling, with space and light and air.
I bought me a modern ranch house—with all of these, plus glare.
Through spacious picture windows the whole world I could see.
What was the whole world doing? Why, staring at me!
It knew what time I wakened; what time I went to bed;
It saw my fallen arches, my underwear of red;
It knew my breakfast menu, and what I had for tea. . . .
A goldfish in a bowl of glass had equal privacy.
But I'm a stubborn fellow, not one to easily give in.
I'll plant a forest round about and make it fit to live in.

Peter Pray,
White Plains, N. Y.

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<i>Euonymus fortunei minimus</i> .	15.00	
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<i>Juglans nigra</i> (Black Walnut).	3.50	30.00
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12 to 18-in. field-grown transplants.	20.00	
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<i>Juniperus horizontalis plumosa</i> (Andorra Juniper).	20.00	
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<i>Lonicera yunnanensis</i> (Yunnan Honeysuckle).	20.00	
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6 to 12 ins.		
<i>Ulmus pumila</i> (Chinese Elm).	5.00	45.00
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Layers, well-rooted		
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¼-in. and up, branched.	2.90	25.00
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December 4 and 5, Minnesota State Nurserymen's Association, Dyckman hotel, Minneapolis.

December 6, Western Pennsylvania Nurserymen's Association, Webster Hall hotel, Pittsburgh.

December 6 and 7, Wisconsin Nurserymen's Association, Hotel Schroeder, Milwaukee.

December 11 and 12, Nebraska Association of Nurserymen, Cornhusker hotel, Lincoln.

January 2 to 5, 1951, Indiana Association of Nurserymen, Purdue University, West Lafayette.

January 3 to 5, eastern regional convention, Hotel Statler, New York.

January 3 to 17, short course for landscape nurserymen, Virginia Polytechnic Institute, Blacksburg.

January 4, New York State Nurserymen's Association, Hotel Statler, New York city.

January 8, Missouri State Nurserymen's Association, Hotel Jefferson, St. Louis.

January 9 and 10, Western Association of Nurserymen, Hotel Jefferson, St. Louis.

January 11, Connecticut Nurserymen's Association.

January 11 to 13, Iowa Nurserymen's Association, Hotel Kirkwood, Des Moines.

January 15, National Landscape Nurserymen's Association, Hotel La Salle, Chicago.

January 15, National Mail Order Nurserymen's Association, Hotel La Salle, Chicago.

January 15 and 16, arborists' school, Cornell University, Ithaca, N. Y.

January 15 to 18, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 22 to 24, short course for arborists, landscape gardeners and nurserymen, Neil House, Columbus, O.

January 25 and 26, Ohio Nurserymen's Association, Neil House, Columbus.

January 26, Western New York Nurserymen's Association, Rochester.

January 28 to 30, Virginia Nurserymen's Association, Hotel John Marshall, Richmond.

January 29 and 30, Kentucky State Nurserymen's Association, Seelbach hotel, Louisville.

January 31 and February 1, Pennsylvania Nurserymen's Association, Roosevelt hotel, Pittsburgh.

February 1, Oregon Association of Nurserymen, Georgian room, Heathman hotel, Portland.

February 2, New Jersey Association of Nurserymen, Trenton.

February 6 to 8, New England Nurserymen's Association, Hotel Kenmore, Boston, Mass.

February 14 to 16, Midwestern chapter of the National Shade Tree Conference, Hotel La Salle, Chicago.

February 20, Rhode Island Nurserymen's Association, Johnson's Hummock's, Providence.

March 22 and 23, Southern Shade Tree Conference, Palm Beach, Fla.

NEBRASKA DATE.

Members of the Nebraska Association of Nurserymen will hold their annual winter meeting December 11 and 12 at the Cornhusker hotel, Lincoln. The program for the 2-day event will be announced later, according to Charles W. Andrews, secretary.

MINNESOTA PLANS.

Twenty-five years of organization will be celebrated December 4 and 5 when members of the Minnesota State Nurserymen's Association meet at the Dyckman hotel, Minneapolis. Besides numerous speakers, the program calls for many entertainment features and a smorgasbord feast.

Subjects to be discussed include "Freedom Forum," by Clarence Lindstrom, director of personnel and industrial relations, Swift & Co., South St. Paul, Minn.; "Newcomers to Northern Ornamental Gardens," by W. R. Leslie, superintendent at the Dominion experiment station, Morden, Man., Canada; "The Best in Taxus," by Prof. L. C. Chadwick, department of horticulture, Ohio State University, Columbus, and "New Fruits for 1950," by Prof. W. H. Alderman, head of the division of horticulture, University of Minnesota, St. Paul. Wayne Ferris, president of the American Associa-

tion of Nurserymen, will give a brief talk, as will John Wight, vice-president of the A. A. N.

WISCONSIN PROGRAM.

Changes in the organization's by-laws will be effected at the thirty-fourth annual convention of the Wisconsin Nurserymen's Association, to be held December 6 and 7 at the Hotel Schroeder, Milwaukee.

Larger hotel quarters will be allocated to the meeting this year. Both meetings and exhibits will be in the Pere Marquette room, with luncheon and banquet facilities available in the nearby East room. Since a larger convention is being planned, the program schedule will be heavy.

Wayne Ferris, Hampton, Ia., president of the American Association of Nurserymen, and John Wight, Cairo, Ga., vice-president of the A. A. N., will talk about subjects pertinent to the industry Wednesday afternoon. Other speakers will include Prof. James Koontz, University of Wisconsin, on oak wilt, and numerous staff members from the offices of E. L. Chambers, state entomologist, who will discuss elm tree diseases.

Thursday afternoon Mr. Chambers will discuss insect pests and their control, and Prof. G. W. Longenecker, landscape department, University of Wisconsin, will tell of the effective ways that landscaping plans may be used to sell the job. Merchandising and advertising problems will also be discussed.

And again it is CHICAGO IN JANUARY!

For the largest gathering of Nurserymen that will be brought together by any of the winter meetings.

It will pay you to be there and it will also pay you to make your hotel reservations NOW. Indications are that our 1951 convention will again be the "Largest Ever."

Of all months, January is the heaviest convention month in Chicago, and hotel men advise us that the situation will be tight and early reservations necessary. Write now for your reservations to the Hotel La Salle, La Salle at Madison, Chicago 2, Ill., and be sure to mention the nurserymen's meetings.

Meeting Dates:

**ILLINOIS STATE NURSERYMEN'S ASSOCIATION,
ANNUAL CONVENTION
January 16-17-18, 1951**

**AMERICAN ASSOCIATION OF NURSERYMEN,
BOARD OF DIRECTORS
January 14-15-16, 1951**

**NATIONAL LANDSCAPE NURSERYMEN'S ASSOCIATION
January 15, 1951**

Closed meetings of a number of allied national nurserymen's associations will also be held over the week-end.

ILLINOIS STATE NURSERYMEN'S ASSOCIATION

No Weed Problem Here! →

Soil was treated before planting
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DOWFUME MC-2

No laborious hand weeding is needed here—because weed seeds were killed by soil fumigation with Dowfume MC-2 before planting was done.

Dowfume MC-2 has shown excellent results—both with seedlings grown under glass and in the field. This new Dow soil fumigant kills most of the weed seeds present in the soil—also controls nematodes and other root-attacking parasites. At higher dosages, it controls many soil-borne plant diseases. It is easy to apply—does a thorough job throughout the tilled layer of soil—aerates quickly to permit planting within 48 to 72 hours.



Uniform, vigorous seedlings growing in flats in soil treated with Dowfume MC-2 before planting.

Your Dow Dealer can supply you with Dowfume MC-2 and the simple equipment needed for its application. Or you may write our Fumigant Division for complete information.



THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

INDIANA MEETING PLANS.

Among the speakers who will highlight the winter meeting of the Indiana Association of Nurserymen, at Purdue University, West Lafayette, January 2 to 5, are John D. Siebenthaler, of the Siebenthaler Co., Dayton, O., and director of the American Association of Nurserymen from region 3. Customer relations will be the topic of Mr. Siebenthaler's talk, and he will refer to the promotional methods that his firm successfully employs to stimulate its customers' good will.

M. Truman Fossum, of the agricultural division of the bureau of census of the United States Department of Commerce, Washington, D. C., will describe the recent federal census of nurseries and will interpret the statistics obtained.

Members of the association will conduct a round-table discussion on the subject, "Starting a Nursery," for the benefit of neophytes in nursery management.

Social events, which include a past presidents' banquet, will be scheduled for the four evenings. Past presidents of the state association will be in charge of the professional entertainment presented after the banquet.

Exhibitors who wish to display

FRUIT AND NUT TREES

	Per 10	Per 100
Apple, 3-yr., $\frac{3}{4}$ to 1-in. cal.....	\$ 6.50	\$ 55.00
Large assortment of varieties.		
Large Montmorency Cherry, 2-yr., $\frac{3}{4}$ to 1-in. cal.....	12.50	110.00
Sweet Cherry, 11/16-in. cal.....	11.00	100.00
9/16-in. cal.....	10.00	90.00
7/16-in. cal.....	8.50	75.00
Black Tartarian, Governor Wood, Lambert, Napoleon, Schmidt, Windsor, Yellow Spanish.		
Plum, 11/16-in. cal.....	9.00	80.00
9/16-in. cal.....	8.00	70.00
Burbank, Mammoth Gold, Red June, Shropshire Damson, Stanley, Prune, Wickson.		
Plum, 2-yr., 1 to 1½-in. cal.....	16.00	....
Abundance, Burbank, Red June, Wickson.		
Pear, $\frac{3}{4}$ to 1-in. cal., 6 to 7 ft.....	10.00	85.00
Bartlett, Clapp Favorite.		
Pear, Kleffer, 1 to 1½-in., 7 to 8 ft.....	11.00	95.00
$\frac{3}{4}$ to 1-in., 6 to 7 ft.....	7.00	65.00
Black Walnut, 6 to 8 ft.....	12.50	115.00
8 to 10 ft.....	16.50	150.00
Papershell Pecan, 4 to 6 ft.....	12.50	115.00
6 to 7 ft.....	16.00	145.00
7 to 8 ft.....	18.00	....
American Filbert, 4 to 6 ft.....	12.50	....
6 to 7 ft.....	15.00	....

Write for Wholesale Price List on other sizes and varieties of Fruit Trees, Nut Trees and Ornamental Plant Material.

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Perennials, Roses
All Nursery Items

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TAXUS

Quality stock with J. B. certificate; in carload or truck-load lots.

TAXUS capitata, 2 1/2 to 8 ft.

TAXUS cuspidata,
1 1/2 to 4 ft.

TAXUS nana and
intermedia, 1 to 3 ft.

TAXUS hicksi and **hatfieldi**,
2 to 4 ft.

Also

TAXUS capitata liners,
3 to 4 yrs., 1 to 2 ft.

BULK'S NURSERIES

Babylon, L. I., N. Y.



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It lists:

Evergreen Seedlings.
Evergreen Transplants.
Broad-leaved Evergreens, liners and finished.
Ornamentals, for lining out.
Evergreen Specimens, B&B.
Ornamental Shade Trees.
Deciduous Shrubs.
Hybrid Azaleas.
Hybrid Rhododendrons.

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Leading wholesale source for
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Send us your Want List.
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EVERGREENS

Seedlings and Transplants
For Fall, 1950, and Spring, 1951
Write for price list.
SUNCREST EVERGREEN NURSERIES
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their merchandise at the 4-day meeting should address Robert C. Simpson, Simpson Orchard Co., Box 88, Vincennes, who will be in charge of all show space.

EASTERN REGION CONVENTION PLANS.

Committeemen met October 13 at the Hotel Statler, New York, N. Y., to make tentative plans for the regional convention of eastern nurserymen that will be held January 3 to 5 at the Hotel Statler. John W. Kelly, Kelly Bros. Nurseries, Dansville, N. Y., chairman of region 1 of the American Association of Nurserymen, heads the convention committee.

Committee members and the organizations they represent are as follows: Homer Dodge, Landscape Service Co., Farmington, Mass., who represents region 1 of the National Landscape Nurserymen's Association; Luke May, Lexington Nurseries, Inc., Lexington, Mass., New England Nurserymen's Association and the Massachusetts Nurserymen's Association; Louis Vanderbrook, Vanderbrook Nurseries, Manchester, Conn., Connecticut Nurserymen's Association; Charles Boardman, Farr Nursery Co., Weiser Park, Pa., and Jesse Flory, LaBars' Rhododendron Nursery, Stroudsburg, Pa., Pennsylvania Nurserymen's Association; Fred J. Noble, Lovett's Nursery, Inc., Little Silver, N. J., and Charles Hess, Hess' Nurseries, Mountain View, N. J., New Jersey Association of Nurserymen; Valleau Curtis, Curtis Nurseries, Callicoon, N. Y., Eastern New York Nurserymen's Association; Howard C. Taylor, Rosedale Nurseries, Eastview, N. Y., and Charles Mouquin, Eugene Henri Mouquin, Inc., Glen Head, L. I., N. Y., New York State Nurserymen's Association; Case Hoogendoorn, Hoogendoorn Nurseries, Newport, R. I., Rhode Island Nurserymen's Association.

Besides serving as chairman of the committee, Mr. Kelly also represents the Western New York Nurserymen's Association, and Marie M. Enberg, Rosedale Nurseries, Eastview, N. Y., serves as secretary-treasurer of the convention group. Messrs. Dodge, Boardman, Mouquin and Hoogendoorn were unable to appear at the committee meeting.

Merchandising was emphasized as the theme of the coming convention, with advertising, displays and

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Northern-grown

CANADIAN HEMLOCK
AMERICAN ARBORVITAE
BALSAM FIR

Per 100 Per 1000

2 to 4 ins., sdgls....	\$ 0.80	\$ 5.00
3 to 6 ins., sdgls....	1.50	10.00
* 6 to 9 ins., sdgls....	2.50	15.00
* 9 to 12 ins., sdgls....	6.00	40.00
* 12 to 18 ins., sdgls....	8.00	65.00
* 18 to 24 ins., sdgls....	20.00	

* Limited quantity of Arborvitae.

Freshly collected. Well rooted. Puddled and packed in sphagnum moss. Catalog of plants, ferns, etc., on request.

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Strong, 2-yr., field-grown.

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... and other varieties in moderate quantities.

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Hardy Azaleas, Pink Dogwood, Jap. Red Maples, Old English Boxwood, Lilacs (French Hyb.), Evergreens, etc., in 1, 2 and 3-yr. transplants, at competitive prices. Write for list.

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ORNAMENTAL EVERGREENS

Trees & Shrubs

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P. O. Huntington Station, N. Y.

PACHYSANDRA

The ideal permanent evergreen ground cover plant for shady areas in all climates. Strong, well rooted, 1-yr.-old plants, \$3.75 per 100; \$35.00 per 1000; 5000 or more at \$32.50.

PEEKSKILL NURSERY SHRUB OAK, N. Y.

sales methods to be included. Fred J. Noble was appointed chairman of the program advertising. Other chairmen appointed were Charles Mouquin, entertainment; Valteau Curtis, publicity; Charles Hess, exhibits, and Marie M. Enberg, registration and arrangements.

Suggested plans for the January 3 program include a possible meeting of the education committee of the N. L. N. A., a directors' meeting of the New York State Nurserymen's Association and a cocktail party for everyone.

President Jac Bulk will conduct a meeting of the New York State Nurserymen's Association, January 4, that will be open to all nurserymen who wish to attend. At the same time Thursday morning there will be a meeting of the New Jersey Association of Nurserymen. Everyone will meet at a 12:30 luncheon and hear a well known speaker. The afternoon session will be under the direction of Homer Dodge. An optional evening session will be held, similar to the successful forum that was conducted on new plant materials at the convention last year.

Delegates of region 1 will meet January 5, and a general meeting for the region will also be held. Friday morning's speakers will include Howard P. Quadland, public relations director of the American Association of Nurserymen, who will tell of the national progress of the "Plant America" program, and Howard C. Taylor, who will report on the work accomplished by the market development and publicity committee. After hearing a luncheon speaker at 12:30, members will attend the Friday afternoon session, at which Wayne Ferris, president of the A. A. N., and Richard P. White, executive secretary of the A. A. N., will speak.

OREGON WINTER MEETING.

The midwinter meeting of the Oregon Association of Nurserymen will be held February 1 in the Georgian room at the Heathman hotel, Portland.

When the members of the executive committee met this month to plan the tentative program, they decided that the principal feature would be the business meeting. Some time will be devoted to reports and talks by representatives of Oregon State College and the agricultural experiment station, Corvallis, whose subjects will include plant pathology and entomology.

Also included at the one-day meeting will be a report on the state's

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1,000,000 transplanted liners; 2, 3 and 4 years in field beds. X indicates times transplanted. Not less than 25 of a variety at the 100 rate. Shipment by express only. Terms: Cash with order and packing free; otherwise, 1/3 deposit with order and balance C.O.D. and packing charged. Japanese beetle certification upon request. Balled material must be picked up at nursery.

HEAVY FIELD LINERS

	100 rate each
<i>Azalea kampaferi</i> , 6 to 9 ins., XXX, 3-yr.	\$0.45
<i>Azalea kampaferi</i> , 9 to 12 ins., XXX, 3-yr.	.65
<i>Azalea mollis</i> , 9 to 12 ins., XXX, 3-yr. branched	.65
<i>Calycanthus floridus</i> , 10 to 20 ins., adlg., 2-yr.	.10
<i>Caragana arborens</i> , adlg., 2-yr.	.10
<i>Chamaecyparis lawsoniana</i> , 8 to 10 ins., 2-yr.	.10
<i>Chamaecyparis lawsoniana</i> , 10 to 15 ins., 2-yr.	.15
<i>Chamaecyparis lawsoniana pendula</i> , 10 to 15 ins., 2-yr.	.22
<i>Chamaecyparis laws. Triumph D. Boskoop</i> , 10 to 15 ins., 2-yr.	.22
<i>Chamaecyparis laws. allumi</i> , 10 to 15 ins., XX, 2-yr.	.22
<i>Chamaecyparis filifera aurea</i> , 6 to 12 ins., X, 2-yr.	.25
<i>Cytisus scoparius</i> , X, 3-yr.	.20
<i>Cedrus libani</i> , 8 to 12 ins., 2-yr.	.35
<i>Euonymus carrierei</i> , X, 4 to 6 ins., 1-yr.	.18
<i>Euonymus carrierei</i> , 6 to 12 ins., XX, 2-yr.	.22
<i>Euonymus coloratus</i> , X, 4 to 6 ins., 1-yr.	.18
<i>Euonymus coloratus</i> , 6 to 12 ins., XX, 2-yr.	.22
<i>Euonymus fortunei erectus</i> , X, 4 to 6 ins., 1-yr.	.16
<i>Euonymus fortunei erectus</i> , 8 to 15 ins., XX, 2-yr.	.20
<i>Euonymus fortunei erectus</i> , 12 to 18 ins., XXX, 3-yr.	.35
<i>Euonymus vegetus</i> , 8 to 15 ins., XX, 2-yr.	.25
<i>Ilex crenata</i> , 4 to 6 ins., XX, 2-yr.	.25
<i>Ilex crenata</i> , 6 to 10 ins., XX, 3-yr.	.35
<i>Ilex crenata bullata</i> , 4 to 6 ins., XX, 2-yr.	.20
<i>Ilex crenata bullata</i> , 6 to 8 ins., XX, 2-yr.	.25
<i>Ilex crenata bullata</i> , 8 to 12 ins., XX, 3-yr.	.45
<i>Ilex glabra</i> , 6 to 10 ins., XX, 2-yr.	.30
<i>Ilex rotundifolia</i> , 4 to 6 ins., XX, 2-yr.	.20
<i>Ilex rotundifolia</i> , 6 to 8 ins., XX, 2-yr.	.25
<i>Ilex rotundifolia</i> , 8 to 12 ins., XX, 3-yr.	.45
<i>Ilex rotundifolia</i> , 10 to 15 ins., XXX, 4-yr.	1.00
<i>Juniper. Andorra</i> , 6 to 9 ins., XX, 2-yr.	.25
<i>Juniper. Andorra</i> , 9 to 15 ins., XX, 2-yr.	.35
<i>Juniper. Irish</i> , 6 to 12 ins., XX, 2-yr.	.25
<i>Juniper. Irish</i> , 12 to 18 ins., XX, 3-yr.	.40
<i>Juniperus canadensis aurea</i> , 6 to 8 ins., XX, 2-yr.	.25
<i>Juniperus glauca hetzi</i> , 8 to 10 ins., XX, 2-yr.	.25
<i>Juniperus glauca hetzi</i> , 10 to 15 ins., XX, 2-yr.	.35
<i>Juniperus glauca hetzi</i> , 12 to 18 ins., XXX, 3-yr.	.50
<i>Juniperus horizontalis glauca</i> , 10 to 15 ins., XX, 3-yr.	.35
<i>Juniperus stricta</i> , 6 to 8 ins., XX, 3-yr.	.35
<i>Juniperus stricta</i> , 8 to 12 ins., XX, 3-yr.	.50
<i>Koeleuteria paniculata</i> , 10 to 15 ins., 2-yr.	.18
<i>Koeleuteria paniculata</i> , 15 to 30 ins., 2-yr.	.35
<i>Larix europaea</i> , 12 to 24 ins., 2-yr.	.18
<i>Leucothoe catesbaei</i> , 4 to 6 ins., XX, 3-yr.	.25
<i>Leucothoe catesbaei</i> , 6 to 10 ins., XX, 3-yr.	.35
<i>Leucothoe catesbaei</i> , 10 to 15 ins., XX, 3-yr.	.50
<i>Picea excelsa</i> , 4 to 10 ins., 2-yr.	.12
<i>Pinus mitchellii</i> , 2 to 4 ins., 2-yr., adlg.	.08
<i>Pinus mitchellii</i> , 3 to 6 ins., 3-yr., X	.15
<i>Pinus nigra</i> , 6 to 10 ins., 2-yr.	.15
<i>Pinus sylvestris</i> , 4 to 8 ins., 2-yr.	.10
<i>Pinus strobus</i> , 4 to 8 ins., 2-yr.	.10
<i>Pyracantha laetifolia</i> , 6 to 12 ins., X, 2-yr.	.20
<i>Quercus palustris</i> , 6 to 12 ins., adlg., 2-yr.	.10
<i>Quercus palustris</i> , 12 to 24 ins., 2-yr.	.15
<i>Rhododendron hybrids</i> , 8 to 12 ins., XXX, 3-yr.	.85
<i>Sophora japonica</i> , adlg., 1-yr.	.08
<i>Taxus canadensis</i> , 6 to 8 ins., XX, 3-yr.	.25
<i>Taxus cuspidata</i> , 6 to 10 ins., XX, 2-yr.	.25
<i>Taxus cuspidata</i> , 10 to 15 ins., XX, 3-yr.	.35
<i>Taxus media hatfieldi</i> , 4 to 6 ins., XX, 2-yr.	.18
<i>Taxus media hatfieldi</i> , 6 to 8 ins., XX, 2-yr.	.25
<i>Taxus media bicolor</i> , 4 to 6 ins., XX, 2-yr.	.18
<i>Taxus media bicolor</i> , 6 to 8 ins., XX, 2-yr.	.25
<i>Thuja occidentalis</i> , adlg., 4 to 6 ins., 2-yr.	.10
<i>Thuja occidentalis</i> , 6 to 12 ins., XX, 3-yr.	.20
<i>Thuja occ. elegantissima lutea</i> , 6 to 8 ins., XX, 2-yr.	.25
<i>Thuja occ. elegantissima lutea</i> , 8 to 12 ins., XX, 3-yr.	.35
<i>Thuja occ. glauca nana</i> , 4 to 6 ins., XX, 2-yr.	.25
<i>Thuja occ. plicata</i> , 6 to 12 ins., XX, 3-yr.	.25
<i>Thuja orientalis</i> , 6 to 10 ins., adlg., 2-yr.	.10
<i>Thuja orientalis</i> , 10 to 15 ins., X, 3-yr.	.18
<i>Tsuga canadensis</i> , 6 to 8 ins., XX, 3-yr.	.20
<i>Tsuga canadensis</i> , 8 to 12 ins., XX, 3-yr.	.25
<i>Viburnum opulus</i> , adlg., 1-yr.	.08
<i>Viburnum opulus</i> , 12 to 24 ins., 2-yr.	.18
<i>Viburnum opulus nanum</i> , X, 1-yr.	.15
<i>Viburnum opulus nanum</i> , X, 2-yr.	.25

B&B NURSERY STOCK

	10 rate each
<i>Azalea kampaferi</i> , 12 to 15 ins., XXX, 3-yr., B&B	\$1.25
<i>Azalea mollis</i> , 12 to 15 ins., XXX, 4-yr., branched, B&B	1.25
<i>Azalea mollis</i> , 15 to 18 ins., XXX, 4-yr., branched, B&B	1.65
<i>Ilex rotundifolia</i> , 12 to 15 ins., B&B	1.25
<i>Pieris japonica</i> , 12 to 15 ins., XXX, 4-yr., B&B	1.25
<i>Pieris japonica</i> , 15 to 18 ins., XXX, 4-yr., B&B	1.60
<i>Pieris japonica</i> , 12 to 24 ins., XXX, 4-yr., B&B	2.15
<i>Rhododendron hybrid</i> , 12 to 15 ins., XXX, 1-yr., B&B	1.75
<i>Rhododendron hybrid</i> , 15 to 18 ins., XXX, 4-yr., B&B	2.50
<i>Taxus canadensis</i> , 24 to 30 ins., B&B	4.50
<i>Taxus canadensis</i> , 30 to 36 ins., B&B	6.00
<i>Tsuga canadensis</i> , 18 to 24 ins., B&B	2.15
<i>Tsuga canadensis</i> , 2 to 3 ft., B&B	2.00
<i>Tsuga canadensis</i> , 3 to 4 ft., B&B	3.90

Bare-root shipment (excess soil shaken off) can be made on any of the above plants listed except taxus and hemlock. The bare-root price is same as B&B price, if shipped, due to extra care in handling. If stock is called for, price per plant is 25c less than listed.

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Imported HOLLAND BULBS

98c per doz.
imported
Holland
Daffodils
Narcissos

49c per doz.
imported
Holland Giant
Crocus

98c per doz.
imported
Holland Tulips

Free Counter Display and 25 Planting Guide Booklets with every order.






300 Tulips	\$24.50
300 Crocus	10.00
50 Narcissus & Daffodils	4.00
Total:	\$38.50
40% DISCOUNT	15.40
Your cost for 650 Bulbs	\$23.10
GOOD PROFIT — COMPETITIVE PRICES	

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SELLING OUT. Specimens 20 x 16 ins. and up, also very large specimens. No smaller stock left. Special discounts on carload or truckload orders. Prices on request. Inspection invited.
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AMERICAN NURSERYMAN

market development and publicity program, which has been set up under the auspices of the national program of the American Association of Nurserymen. James A. Doty, secretary of the association, states that a noon luncheon has also been planned for everyone.

RHODE ISLAND DATE.

Members of the Rhode Island Nurserymen's Association will meet February 20 at the Johnson's Hummock's, Providence. J. C. Brownell, secretary of the state association, states that the Tuesday date was just recently selected for the mid-winter meeting.

KANSAS PLANS LUNCHEON.

Members of the Kansas Association of Nurserymen plan to hold a luncheon when the Western Association of Nurserymen meets at the Hotel Jefferson, St. Louis, January 9 and 10. At present no definite time has been set for the luncheon, which will take the place of a winter meeting.

ARBORISTS AT CORNELL.

Members of the faculty at Cornell University, Ithaca, N. Y., will conduct an arborists' school January 15 and 16. Prof. A. M. S. Pridham, of the department of floriculture and ornamental horticulture, states that any member of the trade who is interested may enroll for the two days of instruction.

SOUTH TREE CONFERENCE.

March 22 and 23 are the dates set for the Southern Shade Tree Conference. H. C. Wilson, secretary of the conference, states that the meeting will be held at Palm Beach, Fla., at that time.

ALBUQUERQUE GROUP ASKS RIGID INSPECTION ACT.

Itinerant truckers of evergreens and shrubs and unlicensed growers operating in New Mexico were the subjects of a special meeting of the newly formed Albuquerque Nurserymen's Association, held October 23 at the office of the Professional Landscaping Service. The meeting was called at the request of the Better Business Bureau of Albuquerque.

Attending the session were Dr. R. F. Crawford, New Mexico College, State College, who is the state nursery inspector; Mr. Heyden, of the county commission, and Sheriff John Flaska, who represented the

KRIEGER'S WHOLESALE NURSERY

BRIDGMAN, MICHIGAN

SMALL FRUITS

Telephone 22

These prices cancel all previous Lists and are subject to change without notice. 250 or over at 1000 rate. Boxing at cost. All prices F.O.B. Bridgman. Usual terms.

GRAPES		Per 100	Per 1000
Concord, 2-1		\$10.00	\$ 80.00
Concord, 1-1		8.00	60.00
Niagara, 2-1		11.00	90.00
Niagara, 1-1		9.00	70.00
Catawba, 2-1		11.00	90.00
Catawba, 1-1		9.00	70.00
Fredonia, 2-1		11.00	90.00
Fredonia, 1-1		9.00	70.00
Delaware, 2-1		14.00	120.00
Delaware, 1-1		11.00	90.00
Van Buren, 2-1		22.00	...
Van Buren, 1-1		16.00	...
Sheridan, 1-1		11.00	...

BLACKBERRIES		Per 100	Per 1000
Eldorado, transplants		6.50	55.00
Eldorado, No. 1, r.c.		5.00	40.00
Alfred, transplants		6.50	55.00
Alfred, No. 1, r.c.		5.00	40.00
Early Harvest, No. 1, r.c.		5.00	40.00

BOYSENBERRIES AND DEWBERRIES		Per 100	Per 1000
Boysenberry (Common), No. 1 tips		5.50	45.00
Boysenberry (Thornless), No. 1 tips		5.50	45.00
Lucrutha Dewberry, No. 1 tips		5.50	40.00

CURRANTS		Per 100	Per 1000
Wildor, 3-yr. heavy		15.00	130.00
Wildor, 2-yr. No. 1		12.00	100.00
Wildor, 1-yr. No. 1		7.00	60.00
Red Lake, 2-yr. No. 1		16.00	...
Red Lake, 1-yr. No. 1		12.00	...

GOOSEBERRIES		Per 100	Per 1000
Downing, 2-yr. No. 1		25.00	...
Houghton, 2-yr. No. 1		25.00	...
Champion, 2-yr. No. 1		25.00	...

BLUEBERRIES		Per 100	Per 1000
Prices of Rancocas, Rubel, Jersey			
2-yr., 9 to 12 ins., bearing age	\$0.40	\$3.50	\$32.50
3-yr., 12 to 18 ins., bearing age	.55	5.00	47.50
4-yr., 18 to 24 ins., bearing age	.75	7.00	67.50

Write for Special Quotations on Quantity Lots.

RED RASPBERRIES		Per 100	Per 1000
Latham, transplants		\$ 7.50	\$ 62.50
Latham, 1-yr. No. 1		6.00	50.00
Chief, transplants		7.00	60.00
Chief, 1-yr. No. 1		5.50	45.00
Sunrise, transplants		7.00	60.00
Sunrise, 1-yr. No. 1		5.50	45.00
Indian Summer, transplants		8.00	70.00
Indian Summer, 1-yr. No. 1		6.50	55.00
St. Regis, transplants		7.00	60.00
St. Regis, 1-yr. No. 1		5.50	45.00

BLACK RASPBERRIES		Per 100	Per 1000
Cumberland, trans. No. 1		8.00	70.00
Cumberland, trans. No. 2		6.50	55.00
Cumberland, tips, No. 1		4.50	35.00
Logan, trans. No. 1		8.00	70.00
Logan, trans. No. 2		6.50	55.00
Logan, tips, No. 1		4.50	35.00
Morrison, trans. No. 1		9.00	80.00
Morrison, tips, No. 1		7.50	65.00
Morrison, tips, No. 2		5.00	40.00

PURPLE RASPBERRIES		Per 100	Per 1000
Sodus, No. 1, tips		5.50	45.00

ASPARAGUS		Per 100	Per 1000
Paradise and Washington			
3-yr. heavy		4.00	30.00
2-yr. No. 1		2.50	18.00
1-yr. No. 1		1.75	12.00
1-yr., in 10,000 lots			10.00

VICTORIA RHUBARB		Per 100	Per 1000
Whole Roots			
1 1/2-in. and up		8.00	75.00
1 to 1 1/2-in.		5.50	50.00
3/4 to 1-in.		4.00	35.00
1/2 to 3/4-in.		3.00	25.00

RED RHUBARB		Per 100	Per 1000
Canada Red, No. 1 divisions		40.00	350.00
McDonald, No. 1 divisions		30.00	250.00

HORSE-RADISH		Per 100	Per 1000
Cuttings, 4 to 5 ins.		3.00	20.00
Whole Roots		5.00	40.00

county; Cecil Pregnall and his assistant, Mr. Chavez, from the county extension office; Harry Lutbeg and Colonel Bower, of the local Better Business Bureau; Captain Doyle, of the city police force, and representatives of all member nurseries.

Discussion revolved around the fact that many trucks entering the state by-passed the regular ports of entry and brought uninspected and frequently diseased stock into New Mexico.

As a result of the meeting, all state nurserymen interested in writing a new nursery inspection act were requested to contact Mrs. H. L. Davidson, Dwarf Fruit Nurseries, 1740 Banaguidi road, Albuquerque, secretary-treasurer of the organization.

Everyone agreed that a new act could be enforceable only if it included a source of revenue large enough to finance employing a full-time state inspector and rigidly enforced penalties for all violators, whether citizens of New Mexico or firms seeking entry into the state.

Mrs. H. L. Davidson, Sec'y.

MORE shade area has been obtained at the Blanco Nurseries, San Antonio, Tex., since the manager, Charles Moore, installed a new section of lath house.

QUEEN O' the LAKES



(Dark Velvety)

and 30 other fragrant

SUB-ZERO HYBRID TEAS

Large and beautiful as any. Easy to grow; long to live. Bloom more; more constantly. Save replacement expense.

Also 20

Yellow and Orange Climbers

Write for trade prices to

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Our Northern Ohio-grown Roses are without equal. Carefully handled from planting to shipping. See our fields and be convinced.

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Brond-leaved Evergreens and a general line of quality ornamentals.

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Splendid Stock

Write for Special Quotations

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MILFORD

DELAWARE

This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By E. Sam Hemming

FOLIAGE COLOR AND THE SOIL.

An outstanding discovery of the second World War was the observation that minute variation in foliage condition and color was noticeable in color photographs. The first use was in the detection of camouflage, particularly when cut trees and limbs were used.

According to recent reports, the scientist who first discovered the phenomenon has carried his investigations much further. In his studies he has discovered that many of our valuable minerals have a definite colorimetric effect on plant foliage. Aerial color photographs taken over mineral-bearing areas indicate to the expert the presence of such minerals as iron, nickel, cobalt, gold, silver and many others.

Students of plant physiology will remember, in their experiments with growing plants in nutrient solutions, how the withholding of certain vital plant elements affected in varying degrees the growth and color of plants. Also, that certain of the minor plant nutrients, such as boron, for instance, are needed in as small a quantity as one part in a million, but, if that small amount is not present, growth is inhibited noticeably.

The trained horticulturist, nurseryman or farmer can likewise tell if his crop needs nitrogen, phosphate, lime or even iron, although a soil test may be needed before he can tell which and how much.

All of these things seem to tie together and suggest many possible uses. It would be gratifying to take a color photograph of our nursery and find the plants are growing in gold ore, but since that possibility is remote, we should more than likely find such photography valuable for other uses. It might be possible thus to test land we were thinking of buying, to find out if it was suitable for the crops we wanted to grow, and, if not, to find out if it contained a soil condition that could not be corrected.

It might also be possible to test our own land so that the correct and best condition for growth of the particular crop desired could be obtained.

From still another angle, it might be possible to photograph improperly nourished trees to find out what

they really need. These ideas seem fantastic, but there are still thousands of unsolved plant problems, and their solutions will come in the ways we least expect. E. S. H.

TROUBLE WITH DOGWOODS.

During a recent visit to our nursery by Dr. George S. Langford, our chief nursery inspector in Maryland, I remarked to him that our customers were having trouble with their dogwoods. From his answer, I infer the trouble is state-wide and may be more widespread.

The first instance I noticed was on some trees at a customer's place about ten miles from the nursery. The leaves on the trees were curling up, and there were no signs of borers. The curled leaves showed, according to one plant pathologist, the presence of botrytis fungus. Several of the trees on this particular place actually died; the others lost a good portion of their leaves. The leaves did not die from drought, because we had a very wet spring. From what Dr. Langford said, probably the wet weather was the cause.

The trouble was not apparent in the nursery, with the exception of an old large pink dogwood near the house. We had a vigorous growing block of young white dogwoods, but

those plants did not seem to show it. After its early summer onslaught, the disease seems to have stopped progressing; so it may not recur next year. That seems to be Dr. Langford's opinion.

When the trouble first appeared, it alarmed our customers and the local garden enthusiasts, for this is dogwood country, with millions of plants in our local woods. They had just been reading about the now much-publicized oak wilt of the middle west, first mentioned in the American Nurseryman two or three years ago, and were beginning to wonder if the dogwoods might be endangered similarly.

I remarked to Dr. Langford, at the same time, that we had noticed a number of hollies being attacked by a white pit-making scale. He advised spraying them with white oil and said that, while the scale might require a certain amount of persistence in spraying, it was not too serious.

We have also been having trouble with a large scale on the tulip poplar, with an accompanying aphid and sooty fungus. It has been found in the woods, on lawns and in the nursery. Dr. Langford said the parasites that normally kept it in check have been greatly reduced in numbers for some reason or other and that the best treatment is to spray with white oil. E. S. H.

W. B. CLARKE, president of W. B. Clarke & Co., San Jose, Calif., is in Arizona for the winter, for relief from arthritis.

TREE PEONIES

2-year-old, 3 to 5-eye grafted stock.

\$1.75 per root; \$160.00 per 100 roots.

Hanadaijin, true purple, full-double.
Kachiyoshishi, light carmine, full-double.
Kamatofuji, lilac, full-double.
Taisho No Hikari, vivid crimson.
Sinkagura, crimson, full-double.
Tamasudare, pure white, full-double.
Rimpo, purple, very big, full-double.
Shintei, cerise, full-double.
Orihime, deep carmine.
Shirovanyu, white, full-double.
Nishitino-en, carmine, full-double.
Akashishishi, deep carmine, full-double.
Nishigentsushiki, red with tinted full-double.
Hosugarasu, dark red, full-double.
Toyochiro, carmine, full-double.
Momoyama, fresh pink.
Higurashi, crimson, full-double.
Taisho No Hikari, purple with tips full-double.
Yuki Zasa, white, full-double, big.
Okinashishi, pure white, full-double.
Kujakushishi, light carmine, full-double.
Godai-shu, white, large double flowers.
Kokokutsumasa, dark red, full-double.
Kokuryunishiki, dark purple, full-double.
Arashiyama, pink.

PEONIES. New Varieties—Parade of Giants.

\$35.00 per 100.

We are pleased to introduce exclusively throughout the United States the following 3 new Double Peony varieties which we feel have proven of outstanding merit.

WILLKIE, Pink. ROOSEVELT, White. EISENHOWER, Red.

NURSERYMEN'S EXCHANGE

938 Howard St.

San Francisco 3, Calif.

LANDSCAPING COSTS.

[Continued from page 10.]

be provided with this over-all planting charge with the explanation that in billing he will receive the benefits of the transaction if actual labor and operating costs on the job amount to less than the over-all quotation made. This appears to be an equitable arrangement between client and operator, but it requires sound estimating on the part of the landscape nurseryman.

It has also been found that it is a common practice in our region for some nurseries, especially those with a heavy drive-in clientele, to quote specimen evergreens on the basis of a planted price. In addition to the variety, this procedure takes into consideration the size of the evergreen, the diameter and weight of the ball and the labor involved in planting. A similar basis is employed in quoting a planted price on shade trees, in which the size of the top growth and the root area of bare-root trees are considered. This should provide a fair basis of charge for both client and planter.

When the customer feels that the individual price quotation on plant materials plus planting labor on the job is a satisfactory and fair charge, we might do well to continue using this method. Whether this system is fair to both customer and nurseryman alike depends to a considerable extent upon the labor crew, which must be well trained, dependable and willing to do a fair day's work on the job.

For the sake of obtaining accurate cost records alone, we can afford to do a larger number of our planting jobs on an individual price basis. This method appears to be, after all, the best way to arrive at a basis for charging clients which is profitable to the nurseryman on one hand and gives satisfaction without overcharge to the customer on the other.

Some Individual Cost Factors.

It is not recommended that you use the figures presented in this cost study in your own operations, for they are for one landscape firm's operations only. Likewise, I do not feel that any general cost schedule applying to the whole field would be practical. Rather, any cost figures available should be used as a guide or for comparative purposes only, and they should be combined with those compiled from your own operations.

Geographical differences and types of planting stock can cause considerable variations. Costs can also vary greatly according to such

LINING-OUT STOCK

Fall, 1950—Spring, 1951

Write for Illustrated List

	Per 100	Per 1000
European Mountain Ash, X, 3 to 4 ft.....	\$45.00	....
European Mountain Ash, X, 2 to 3 ft.....	25.00	....
European Mountain Ash, 2-0, 24 to 36 ins.....	15.00	....
European Mountain Ash, 2-0, 12 to 24 ins.....	10.00	....
(Grown from seeds from red-berried trees.)		
White Birch, 2-0, 10 to 18 ins.....	7.50	\$60.00
Green Barberry, X, 6 to 12 ins.....	7.00	....
Colorado Blue Spruce, 3-2, 6 to 9 ins.....	15.00	....
Colorado Blue Spruce, 3-0, 4 to 8 ins.....	7.00	50.00
Colorado Blue Spruce, 3-0, 2 to 4 ins.....	4.00	25.00
American Arborvitae, 2-2, 6 to 9 ins.....	9.00	75.00
American Arborvitae, 2-2, 4 to 6 ins.....	7.50	60.00
Colorado Green Spruce, XXX, 10 to 16 ins.....	25.00	....
Colorado Green Spruce, XXX, 6 to 10 ins.....	18.00	....
Ponderosa Pine, 2-2, 4 to 8 ins.....	8.00	....
Ponderosa Pine, 2-0, 2 to 5 ins.....	5.00	35.00
Black Hills Spruce, XX, 9 to 12 ins.....	27.50	....
Black Hills Spruce, XX, 6 to 9 ins.....	20.00	....
Dwarf Montana Mugho Pine, 2-2, 4 to 6 ins., sheared.....	15.00	....

SCOTCH PINE

Stock from Danish Seeds

	Per 100	Per 1000	Per 5000	Per 10,000
2-0, 1 to 3 ins.....	\$ 3.00	\$18.00	\$ 80.00	\$150.00
2-0, 3 to 8 ins.....	4.50	25.00	120.00	220.00
2-2, 6 to 12 ins.....	10.00	....	....	....
2-2, 12 to 18 ins.....	20.00	....	....	....

Terms: Cash with order, please; or 25 per cent with order and balance before shipment. Packing free; shipment by parcel post or express, collect. Quantity prices on single items only, not collective totals.

25 at 100 rate; 250 at 1000 rate.

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HARBOR SPRINGS, MICH.

TAXUS MEDIA HALLORAN

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All-America
Introductions.

Refrigeration.

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PERSIMMON

SHEPARD NURSERIES

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ORNAMENTAL NURSERY STOCK

Truckloads only, no boxing.
60 acres growing. Skaneateles, N. Y.

CHINESE CHESTNUT TREES

for Retailers
Blightproof Ching Chow Strains

SUNNY RIDGE NURSERY

Swarthmore, Pa.

NORTHERN - GROWN LINING - OUT STOCK

	Per 100	Per 1000
<i>Betula papyrifera</i>		
1 to 2 ft.	\$ 6.00	\$ 50.00
2 to 3 ft.	8.00	70.00
3 to 4 ft.	25.00	
4 to 6 ft.	40.00	
<i>Clethra alnifolia</i>		
6 to 18 ins.	6.00	50.00
<i>Ilex verticillata</i>		
1 to 2 ft.	6.00	50.00
<i>Syringa vulgaris</i>		
1 to 2 ft.	6.00	50.00
<i>Viburnum cassinoides</i>		
1 to 2 ft.	6.00	50.00

EVERGREENS

<i>Abies balsamea</i>		
4 to 8 ins.	4.00	25.00
8 to 12 ins.	8.00	60.00
<i>Thuja occidentalis</i>		
6 to 9 ins.	4.00	25.00
6 to 12 ins.	5.00	40.00
<i>Tsuga canadensis</i>		
4 to 8 ins.	4.00	25.00
8 to 12 ins.	5.00	40.00

HEMLOCK TRANSPLANTS

<i>Tsuga canadensis</i>		
4 to 8 ins., 1-yr. tr.	12.00	100.00
8 to 12 ins., 2-yr. tr.	18.00	160.00

The above stock is first-quality collected lining-out stock, except as otherwise noted. Send for complete list of Hardy Native Ferns, Lilies, Orchids, Wild Flowers, Trees, Shrubs and Evergreens.

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ORNAMENTALS TREES SHRUBS EVERGREENS

Wholesale growers of a general assortment for the best landscape plantings.

BRYANT'S NURSERIES

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THUJA OCCIDENTALIS COMPACTA ERCTA (NEW)

We offer this new variety in rooted cuttings; also established stock from 2 1/4-in. pots.

Write for descriptive folder in color.

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WESTMINSTER, MD.

LINERS

Ask for list.

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Box 25 NEW LONDON, CONN.

POTTED LINERS GRAFTS

(Beetle Certified)

HEASLEY'S NURSERIES

Freeport Rd. BUTLER, PA.

factors as the methods used in planting, type of organization, personnel on the job, efficiency of equipment and tools, overhead items and, if I may use the expression here, what the traffic will bear. You have no doubt observed from your own operations that planting costs can even vary considerably between competitive nurseries in the same town or locality.

Provided that you have available for ready reference some accurate cost records from your own operations, as well as some of a general nature, there are still many individual cost factors, aside from plant materials, that should be carefully analyzed in making each planting estimate. Some of these factors worth mentioning are: Location and type of soil and the amount of soil and prepared mixture needed for back-filling; applications of peat moss and various mulches; watering difficulties and soil contour treatment for permanent watering facilities, and the cost of digging holes, depending on location and size.

Other factors are: The necessity of repeated handling of nursery stock in local storage and in heeling in; the amount of surveying needed to stake out and follow the plan; the landscape architect's supervision and inspection on the job as well as the original time and expense in preparing the landscape plan; the size and efficiency of the planting crew; the distance to be traveled to and from the job, and the operation of the trucks. A margin of safety should be employed against unforeseen contingencies also.

To show the inconsistency of using planting cost figures based on percentage of the value of stock alone, without some of the other considerations just presented, here is a simple example. You would certainly not want to penalize a customer who can afford to buy a planting job which uses five 4 to 4 1/2-foot Canaert junipers, worth \$15 each, by planting them for \$15, or twenty per cent of the retail value, while a more conservative client who purchases five eastern red cedars of identical size and worth just \$6.50 each, gets his trees planted for only \$6.50, likewise twenty per cent of the tree's value.

Determining the Labor Rate.

Each landscape operator will have to determine his own labor rate and certain other charges so as to provide a reasonable profit to which he is entitled. At our own nursery we do not generally place men on the

EVERGREEN LINERS IN PLANT BANDS

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Book your order for spring.

JUNIPER, Pfützer, Andorra, Savin, Procumbens, Irish, Swedish, Greek, 5 to 8 ins., 14 1/2c
8 to 10 ins., 20c

TAXUS CUSPIDATA, Spreading Japanese Yew.

TAXUS CAPITATA, Upright Japanese Yew.

4 to 6 ins., 14 1/2c

EUONYMUS vegetus.

EUONYMUS patens.

(Large or Small Leaf.)

5 to 8 ins., 14 1/2c

EUONYMUS coloratus.

Beautiful leaf-veined ground cover or wall climber.

Branched field plants,

15 ins., 14 1/2c.

Heavy, outdoor, summer-rooted

cuttings 5c

Above prices are for 300 or more, total order. If less than 300, price is 16c instead of 14 1/2c, 22c instead of 20c, 6c instead of 5c.

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Send your order for the new nursery book, "Garden Guide for the Midwest," to Frank Glenn, 197 W. 11th St., Kansas City, Mo., \$3.75. Author is Stanley McLane, of J. C. Nichols Co., Kansas City builders. He is held in high regard by engineers, builders, real-estate men and nursery trade in this area.

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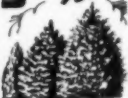
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20 MILLION TREES A YEAR!

Complete line of Nursery Stock - Evergreens, Seedlings and Transplants, Hardwood Seedlings, Fruit, Shade and Nut Trees, Roses, Berries, Shrubs and Rhododendrons.

MUSSEY FORESTS, Inc.
Indiana, Pa.



BOYD NURSERY CO., McMinnville, Tenn.**SPECIALS FROM BOYD'S**

Nursery-grown Seedlings for Lining-out.

	100 rate
White Dogwood	Each
18 to 24 ins., 2-yr. seedlings	\$0.10
24 to 3 ft., 2-yr. seedlings	.15
3 to 4 ft., 2-yr. seedlings	.25
4 to 5 ft., 2-yr. seedlings	.40
Silver Maple	
2 to 3 ft., seedlings	.03
3 to 4 ft., seedlings	.06
4 to 5 ft., seedlings	.10
5 to 6 ft., seedlings	.15
Catalpa Speciosa , good understock for Catalpa Bungei.	
3 to 4 ft., seedlings	.05
4 to 5 ft., seedlings	.10
5 to 6 ft., seedlings	.15

Catalog on Request

planting crews until they have gained considerable skill in all phases of nursery work, are trained to deal with the public and are in our top wage-scale brackets.

Except for about four to six weeks in midwinter and during the regular spring and fall planting season, we employ our landscape crews on landscape maintenance jobs. On these jobs labor is placed on an actual hourly basis, where charges of labor and operating expenses cannot be buried and lost in a maze of nursery stock sales. Here is the opportunity to stress good organization of your planting crews and to make detailed cost analysis of their work.

While my subject does not permit a full discussion of landscape maintenance and arboricultural services for the landscape nurseryman, I would like to stress that they are valuable parts of the business for the landscape nurseryman to develop. These types of work help to keep skilled planting crews on the payroll and keep them in contact with the regular customers and in his favor the year around. A landscape maintenance department advertises your nursery and develops new customers for plant materials and landscape jobs, while increasing clients' interest and pride in gardening and good landscaping. Also it raises the landscape standards in the community, which in turn reflects on the services of the nurseryman. Most landscape nurserymen's interests should go beyond just selling the customer a bill of materials. They should give further community service as well.

It is easier, comparatively, to establish labor rates and operating expenses for planting crews working within the city in which the nursery is located. But when crews are sent considerable distances out of the city, the matter becomes more complicated. The items involved, however, will vary considerably with the type of nursery operation being conducted.

By necessity, we charge a higher labor rate out of town. There is also

CHINESE CHESTNUT

Seedling and Grafted Trees

Pure *Castanea mollissima* seedling trees of the Peter Lui strain and grafted trees of the Nanking, Meiling, Kuling and Abundance varieties. Seedling sizes from 12 inches to 3 feet, and grafted trees from 4 feet to 6 feet.

Our moderate prices quoted on request.

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BROAD-LEAVED EVERGREENS, CONIFEROUS EVERGREENS, DECIDUOUS MAGNOLIAS, SHRUBS, etc.

Lining-out and finished grades. Quality stock at prices you can afford to pay. Our lists for the season 1950-51 will be mailed promptly upon receipt of your request.

T. G. OWEN & SON, Inc.
COLUMBUS, MISSISSIPPI

HEMLOCK
Rhododendron — Kalmia
Azalea**CURTIS NURSERIES**

CALLICOON, N. Y.

Azalea Hinodagiri, 3 to 6 ins., 2-yr. T.	Per 100 \$13.00
Battle Ivy, 2-yr. B.C.	6.00
English Box, 2 to 3 ins., T.	7.50
3 to 4 ins., T.	10.00
American Box, 3 to 4 ins., T.	2.50
4 to 6 ins., T.	10.00
6 to 8 ins., T.	15.00
Hex Bullata, 4 to 6 ins., 2-yr. T.	15.00
6 to 8 ins., T.	20.00
Hex Crenata, 4 to 6 ins., 2-yr. T.	15.00
6 to 8 ins., T.	20.00
Leucothoe Catesbaei, 6 to 8 ins., T.	15.00

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Mollis, Japonica, Ghent, Pontica, Mucronulata and Viscosa.	Each	Each	Each
	1 to 4	5 to 24	25 to 100
12 to 15 ins.	\$2.00	\$1.75	\$1.65
15 to 18 ins.	2.25	2.00	1.90
18 to 24 ins.	3.00	2.75	2.50
24 to 30 ins.	4.00	3.75	3.50
30 to 36 ins.	5.00	4.50	4.00
36 to 42 ins.	6.00	5.50	5.00

Mollis Hybrid, Apricot

Glory (color mellow apricot) (Our introduction).	Each	Each	Each
	1 to 4	5 to 24	25 to 100
12 to 15 ins.	2.25	2.00	1.90
15 to 18 ins.	2.75	2.50	2.25
18 to 24 ins.	3.50	3.25	3.00
24 to 30 ins.	4.50	4.25	4.00

Mollis Hybrid, Red King

(color Chinese red) (Our introduction).	Each	Each	Each
	1 to 4	5 to 24	25 to 100
12 to 15 ins.	2.50	2.25	2.00
15 to 18 ins.	3.00	2.75	2.50
18 to 24 ins.	4.00	3.75	3.50

ILEX, B&B.

Crenata Convexa	Each	Each	Each
	1 to 4	5 to 24	25 to 100
12 to 15 ins.	2.00	1.75	1.65
15 to 18 ins.	2.50	2.25	2.00
Crenata Rotundifolia	Each	Each	Each
	1 to 4	5 to 24	25 to 100
12 to 15 ins.	1.75	1.65	1.55
15 to 18 ins.	2.25	2.00	1.90
18 to 24 ins.	3.00	2.75	2.50
24 to 30 ins.	4.00	3.75	3.50

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a hauling charge assessed to each job planted, which is based on the operation of the trucks. This takes into consideration the mileage rate transporting of stock and planting on each particular truck for the crews, repairs and depreciation on that particular truck and the round-trip travel time of the crew. Where several jobs may be planted for different customers on one trip, the hauling charges are pooled, and each client is charged his apportionate share.

The out-of-town labor rate is based on such items as insurance coverage on the crew, the amount actually paid out in wages, the hourly work week, overtime and the weekly average expense check to the foreman. Labor insurance coverage, which has been running about five per cent of wages, includes workmen's compensation insurance, public liability coverage, social security payments and unemployment compensation taxes. The expense check to the foreman includes such crew expenses as hotel rooms, meals, telephone calls and minor maintenance of tools and equipment. Of course, some of these items are also evaluated for establishing the rates for planting crews at the nursery's headquarters in town.

We have found that a 2-man planting crew is the most efficient unit, especially on the out-of-town jobs. During the rush of an all-too-short planting season, however, additional men have to be placed on the crews, which slightly increases planting costs.

As landscape nurserymen, we should pause long enough between planting seasons to prepare constant checks on operations and keep making them at every stage of our operations. This sort of thing is a regular procedure in our own operations, and we have received much benefit from these cost studies. For example, during the past three years it has been necessary to increase our hourly labor rate to the client. This was necessary once for the city crews and twice for the out-of-town crews in order to keep our planting service costs out of the red side of the ledger. We have found that the out-of-town crews, especially, must be constantly checked on, as leaks in the profits can easily enter in on this item. We keep regular records on these crews by checking against the completed job tickets at the end of each trip or weekly period. You, too, will find that it is time and money well spent to check constantly on your crews' efficiency.

I have the feeling during this pe-

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WAX EMULSION
Spray, paint or dip transplanted trees and shrubs to reduce loss of moisture and winter wind burn.
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30-gal. drum....36.00 1-gal. can.....3.00

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Pear, 2 and 3-yr.
Cherry, 1 and 2-yr.
Plum, 1 and 2-yr.
Apricot, 1 and 2-yr.
Peach, 1-yr.

Thurlo Weeping Willow,
5 to 6 ft., up to 2-in.

Lombardy Poplar, 5 to 6 ft., up to 2-in.

Arbovitae, Pyramidal; Juniperus columnaris, glauca, keteleeri, Hill's Dundee, up to 3 1/2 to 4 ft. Pfitzer Juniper, 15 to 18 and 18 to 24 ins. Austrian and Scotch Pine, heavily sheared, 4 to 5, 5 to 6 and 6 to 7 ft.

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Wayside



Gardens

riod of steadily rising costs of labor and equipment and of higher taxes and overhead all along the line, that some landscape nurserymen may be falling down in making planting estimates for their clients. They may be finishing the planting season without making that reasonable margin of profit which they should have.

PENNSYLVANIA, MISSOURI FIGHT OAK WILT ATTACKS.

Oak wilt has been discovered for the first time in Pennsylvania, and its fungus was recently isolated from chestnut trees that were growing in Missouri.

The owner of a wooded lot in Mifflin county, near McVeytown, Pa., found that attached leaves were wilting and there were dark brown streaks in the outer sapwood of the twigs and branches of a red and a black oak. State foresters inspected the area and discovered that three red oaks apparently had been killed several years previously. Three white oaks were found to have numerous suckers along the main stems and many dead branches. Although state foresters suspect that there are other instances of oak wilt within the state, it is almost impossible to determine the exact extent of the disease inasmuch as there are approximately seven million acres of oak trees in Pennsylvania.

Five Chinese chestnut trees in a 12-year-old planting in Missouri were observed late in August with defoliation of their green leaves and also discolored leaves. Some trees had discolored sapwood and dying tops. A nearby planting of Chinese chestnuts showed no signs of the disease, but oak wilt was present in the locality. Inspectors are trying to clarify the host relationship of the fungus and determine the means of transmission of the fungus to the chestnuts.

MOSHER TO MISSOURI.

Harold E. Mosher recently joined the staff of the department of horticulture at the University of Missouri, where he will serve as a landscape architect and also as an instructor in horticulture.

A native of Sterling, Mass., Mr. Mosher is a graduate of the University of Massachusetts. He has been associated with the Lake Placid Club as superintendent of the grounds and landscape architect for the past three and one-half years. During World War II Mr. Mosher served overseas in the medical corps for three years.

We Offer for Fall and Spring NURSERY-GROWN STOCK

	Per 100	Per 1000		Per 100	Per 1000
Spiraea Vanhouttei.			Amur River North Privet.		
12 to 18 ins., C.	\$ 3.00	\$ 30.00	6 to 12 ins., C.	\$ 2.00	\$ 17.50
12 to 18 ins., br.	6.00	50.00	12 to 18 ins., br.	5.00	45.00
18 to 24 ins., br.	15.00	140.00	18 to 24 ins., br.	7.50	65.00
Spiraea Collosa Rosea.			2 to 3 ft., br.	10.00	90.00
6 to 18 ins., S.	3.00	25.00	Cornus Florida.		
18 to 24 ins., S.	10.00	90.00	White Dogwood,		
Abelia Grandiflora.			6 to 12 ins., C.	3.00	25.00
6 to 12 ins., C.	10.00	90.00	12 to 18 ins.,	4.00	40.00
12 to 18 ins., C.	15.00	140.00	18 to 24 ins.,	6.00	60.00
12 to 18 ins., br.	25.00	240.00	18 to 24 ins., tr., br.	15.00	140.00
18 to 24 ins., br.	40.00		2 to 3 ft., tr., br.	25.00	
2 to 3 ft., br.	60.00		3 to 4 ft., tr., br.	40.00	
Calycanthus Floridus.			4 to 6 ft., tr., br.	75.00	
6 to 12 ins., S.	2.00	20.00	Cornus Florida Rubra.		
12 to 18 ins., S.	4.00	35.00	Red-flowering Dogwood,		
18 to 24 ins., S.	7.50	60.00	18 to 24 ins., br.	125.00	
Weigela Nana, Variegated.			2 to 3 ft., br.	175.00	
12 to 18 ins., C.	7.00	60.00	3 to 4 ft., br.	300.00	
18 to 24 ins., C.	10.00	90.00	Deutzia, Pink and White.		
Weigela Rosea.			6 to 18 ins., liners.	3.00	25.00
6 to 18 ins., C.	3.00	25.00	12 to 18 ins., br.	4.00	40.00
12 to 18 ins., br.	6.00	50.00	18 to 24 ins., br.	6.00	60.00
18 to 24 ins., br.	10.00	90.00	White Snowberry.		
Hydrangea Peegee.			12 to 18 ins., br.	25.00	
6 to 12 ins., C.	10.00	90.00	18 to 24 ins., br.	40.00	
12 to 18 ins., br.	15.00		Mimosa Tree.		
18 to 24 ins., br.	25.00		2 to 3 ft.,	10.00	
2 to 3 ft., br.	40.00		3 to 4 ft.,	15.00	
Hydrangea Arborescens.			4 to 5 ft.,	30.00	
6 to 12 ins., S.	6.00	50.00	5 to 6 ft.,	100.00	
12 to 18 ins., S.	10.00	90.00	6 to 8 ft., br.	150.00	
18 to 24 ins., br.	15.00		Amur River South Privet.		
2 to 3 ft.,	25.00		6 to 18 ins., S.	.40	3.50
			18 to 24 ins., S.	1.00	6.00
			18 to 24 ins., tr., br.	2.00	15.00
			2 to 3 ft., tr., br.	3.50	30.00

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BOX 125

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Chinese Arborvitae, seedlings, $\frac{1}{8}$ to $\frac{3}{8}$ -in. caliper,
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Juniperus Virginiana, seedlings, $\frac{1}{8}$ to $\frac{3}{8}$ -in. caliper,
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8 to 10 ft.55
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CASTOWN, OHIO

New Method of Fertility Level Control

By William B. Mulkolland

One of the most valuable recent advances in nursery practices relating to fertility-level determination is the use of a soluble salts indicator. To the average nurseryman the word salt means sodium chloride, or the white material which comes out of the shaker on the dinner table. It is true that this is a salt; however, there are many other salts, some of them beneficial and some of them toxic to plants. The materials used to fortify organic fertilizers and those used for hydroponics generally are the beneficial salts.

The plant takes up the nutrients from the soil in the form of salts or their parts, such as nitrates, phosphates, potassium, calcium, etc., and it is often advantageous to supply the plant with these salt materials directly. Regardless of what type of fertilizer is used, whether organic or inorganic, damage by overfertilizing is caused by the excessive soluble salts in the plant's root zone. Therefore, if the soluble salt concentration can be determined, a good indication of the general fertility level is obtained.

Determining Salt Concentration.

Several instruments are now available that have proved to be satisfactory for this purpose. Generally, these soluble salt indicators consist of electron tube oscillators used in conjunction with wheatstone bridge networks. The solution is generally a 2:1 soil extract two parts water and one part soil by weight. It is placed in a container in which it comes into contact with a pair of electrodes. A current is then passed through the solution from one electrode to the other. The instrument gives the conductivity of the solution between the electrodes.

In work done by the United States Department of Agriculture it has been determined that the conductivity of a solution has a direct relationship to the total soluble salts. The relationship is expressed by the factor 7. By this is meant that a reading of 200 (200X10-5mho/cm) on the Solu Bridge has a value of 200 times 7, or 1400 ppm, of dissolved salts. By use of this information, a quick method of correlation to known data concerning salt tolerance of plants is obtained.

In work done in laboratories of the Monrovia Nursery Co., at Monrovia, Calif., further correlation has

been found between a high conductivity reading and a high nitrate level. While an indicator reading cannot be directly interpreted in terms of an actual nitrate level, experience with the plants plus actual analysis for nitrate show a sufficiently accurate correlation for general fertility-level determinations.

In studies made in recent years at the United States regional salinity laboratory, Riverside, Calif., a great deal of information regarding salt tolerance has been accumulated. This data plus experimental data obtained from laboratory testing of nutrient levels provided the necessary information with regard to plant tolerance to the various nutrient elements. The primary factor that has to be determined is a satisfactory ratio of major and minor ele-

ments to give the plant what it needs for good growth response. Once this ratio is set the problem of keeping the plant supplied with the proper amounts of these materials is established.

Use of Liquid Fertilizers.

By use of a quickly available material applied as a liquid, good control of proper levels may be easily maintained. Tests with the soluble salts indicator on soils give rapid indication of the nutrient level. If the level is too low, it may be easily increased. Under the system of fertilization used, it is not possible to overfertilize the plants for two reasons.

First, the liquid fertilizer is watered on at a concentration that is

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9 to 12 ins. \$18.00

12 to 18 ins. 25.00

18 to 24 ins. 35.00

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QUALITY JUNIPER GRAFTS

For spring, 1951, delivery, from 2 1/2-in. pots on *Virginiana* understock. We are grafting *Juniperus Virginiana* *Canaerti*, *Glaucia*, *Pyramidiformis* (Dun-dee), *Burki* and *Keteleeri*.

For Fall or Spring delivery, 2 and 3-yr. field-grown Grafted Junipers in the above varieties.

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We offer a small quantity of *Juniperus Burki* and *Keteleeri* in 10 and 12-year-old specimens. Extra-heavy, 5 to 6 and 6 to 8 ft.; also *Juniperus Stricta*, 5 to 6 ft., well sheared and many times transplanted.

Koster Juniper, spreaders, 4 to 6 ft.

Mugho Pine, 3 to 5 ft.

100 **Liquidambar**, 2 1/4 to 4-in. caliper.

400 **Ash**, 1 1/2 to 2-in. caliper.

10,000 **Apple and Pear** trees, 2 and 3-year, commercial varieties.

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well within the safe limit. This safe limit is one that has been established by work with plants in culture solution. Second, as all of the material is immediately available, there can be no sudden increase in the fertility level as may occur during a warm period when organic minerals are used. Thus, what is present will only decrease in amount as leaching and the plant assimilation take place.

In commenting upon a safe value for fertilizer concentration, it might be stated that to work with a soluble salts indicator, it is necessary to use materials which are not only soluble in water, but also exist as ions when in solution. The reason for this is that ionic materials in solution will conduct an electrical current in direct proportion to their concentration in the dilute solution. Thus the conductivity is a direct measurement of the strength of the liquid fertilizer. When using these materials, a safe value is between the Solu Bridge reading of 300 to 350.

Soil Paste Extract.

The need for a standard extracting method is one of the first problems that confronts the researcher in soils. Several of the more common methods have been tried, and the conclusion is that a saturation paste extract is the best. The saturation paste extract comes from the pressure or vacuum filtration of a saturated soil paste. It has been found that the saturation percentage for most soils is approximately twice the field capacity, which is that water remaining in the soil after free drainage has taken place. Because of this, correlation is obtained to actual growing conditions as they exist for the plant.

In addition, it has been found that the further the soil moisture percentage gets from the field capacity of a soil, the more meaningless becomes the analytical values obtained from such an extract. Possibly the best method would be to extract the soil at field capacity, but this has not proved to be practical for routine salinity determinations. Thus by using a saturated soil extract, direct correlation with field capacity for any soil type or mixture may be obtained.

Nutrient Indicator Devised.

Because the present methods of salinity determination require extensive sampling and a time consuming analysis, it was decided to devise an instrument which would give fertility-level indications as they exist in the actual soil in situ. Experiments by the United States Depart-

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Packed in wire-bound citrus crates.

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10 to 15 ins.	35.00
	Per 100
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24 to 36 ins.	12.50

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The most beautiful of all. Delicate, shell-pink, perfectly shaped buds produced in great abundance.

	Per 10	Per 100
No. 1, own roots.....	\$4.00	\$35.00
Medium, own roots.....	3.00	25.00
No. 2, own roots.....	2.25	17.50

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ment of Agriculture show that significant data may be obtained by using a saturated paste directly and determining its conductivity. This data has been found to correlate quite well with total soluble salts or fertilizer content of the soil.

With this information in mind, a nutrient indicator device was developed and trade-marked, which gives significant correlation with plant tolerances and responses. The Nutricator consists of a pair of electrodes attached to an ohmmeter. The ohmmeter has its own source of power, and thus the equipment is portable and may be used in the field. The soil to be tested is watered a half-hour before the reading is taken. The reason for this delay is to insure that the soil has returned to some value near field capacity. The actual value of the moisture percentage after this period of time has never been determined.

The results obtained, however, indicate a fairly consistent moisture percentage for all soils and soil mixtures examined. With reference to soils and soil mixtures, it might be stated that the following are used: Field soil, medium loam; field soil and peat; field soil and sand; peat and sand; silt, and peat.

In all cases tested with the above mixtures, satisfactory agreements have been obtained. Thus by using the Nutricator after an irrigation, a rapid spot check for fertility level may be obtained for a whole area. It will be found that each electrode immersion will give a different reading even in a uniform block of plants. Thus it becomes necessary to take seven to ten readings and obtain an average from these. This amounts to the same thing as taking a series of samples, only it is much more rapid.

In many cases where a plant is ailing, a spot check with the Nutricator will indicate whether the difficulty is from too much or too little fertilizer. In this way one of the worst nemesis of nurserymen is overcome, that of fertilizing an already overfertilized plant.

Possibly the most important aspect of this type of indicator is the response which is obtained from varying nitrate levels. Nitrates are possibly the most critical of all ions to which plants respond. They are the most toxic in excess, the most beneficial at proper concentration and the most limiting in deficient qualities.

A soluble salts indicator gives the nurseryman a good quick check on the fertility of his planting medium provided proper cognizance is taken of the relationship between field

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4 to 6 ft., \$60.00 per 100 in
200 lots, delivered up to 200
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CORNUTA HOLLY

(Chinese Horned Holly)

2 1/2-in. pots, 20c each.

Generous grade. Have grown
since being potted. Good root
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34 other varieties in liners.

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railroad and express companies
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of the country.

Reference: Bank of Louisiana.



SEMMES NURSERIES

AZALEAS - CAMELLIAS
and other choice evergreens

Wholesale Catalog SEMMES, ALA.

TWO-YEAR, FIELD-GROWN ROSES

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Polyanthas and Climbers.

Good roses since 1920.

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ROSE LAWN NURSERIES
WINNSBORO, TEXAS

capacity and the extracting dilution. The Nutricator eliminates the necessity for correlation with field capacity conditions and also gives a rapid fertility check of the soil in place.

AUTOMATIC VENTILATION OF COMMON STORAGE.

[Continued from page 8.]

pressure positively operates the microswitch.

The system is adjusted by placing both air bulbs in a container of cold water. When both bulbs are at the same temperature, the contacts are adjusted so that the circuit is barely broken.

Desired Temperature.

The lowest temperature used in the commercial cool storage of horticultural materials is 30 degrees Fahrenheit, but the most common is 32 degrees. The objective in common storage is to attain and hold the desired temperature as soon as possible in the fall and to maintain it as late as possible in the spring. Obviously, a temperature of 40 degrees can be attained earlier and held later than a temperature of 32 degrees. The Canadian experiments were related largely to the problem of reaching and holding a temperature of 32 degrees in the storages, an accomplishment difficult, if not impossible, to achieve before the development of an automatic system of ventilation.

The experimental data taken consist of the records made in each of two storages by a thermograph, which recorded outside and inside air temperatures on a 7-day chart. The measurements of temperature during midwinter showed merely that the storages were being held at the desired temperature.

To allow maximum variations in temperature the storages were nearly empty. For this reason there was little or no biological heat produced in them, and the maintenance of temperature depended largely on a balancing of heat loss by an electric hot plate of 1,320 watts, operated by a thermostat. In the winter of 1947 and 1948, when data were recorded, the ventilation system operated only briefly at isolated intervals. It might be noted that in underground storages at Guelph regular ventilation is required during the winter to eliminate heat acquired from soil in order to hold the temperature at 32 degrees.

The season used for study began with the last week of adequately controlled storage temperature in the spring and ended when the 32-degree

CHERRY TREES

For the first time in ten years we are able to offer to the trade a complete list of both **1-year and 2-year Sweet and Sour Cherry Trees**. We would appreciate an opportunity to quote you on your needs for the coming season. We feel both you and your customers will be highly pleased with our McClain-grown cherry trees.

We also have a fair surplus in **1-year Peach, 1-year and 2-year Pear and Grapevines**.

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Black and Purple Raspberries, Tips and Transplants

Red Raspberries, No. 1 and Transplant Grades

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one of the largest small fruit sections in the world.

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APPLE, PEACH, CHERRY, PLUM Trees.

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Currants and Berry plants

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Plum	Cherry	Apricot
Figs	Grapes	Pecans

**June Bud Peach
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Ornamental and Shade Trees**

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Euonymus Alatus Compactus

2-yr., in 2-in. pots.

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Quality 2-in. pot plants.

Euonymus, Newport Variety

Quality 2-in. pot plants.

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Quality 2-in. pot plants.

We are also in good position to book steady future deliveries on this attractive item.

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Specimen Evergreens

Ornamental Shrubs

Fruit Trees

Plum Seedlings

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From the Center of the South

Red Barberry, 4-yr. trpl.,	Each
15 to 18 ins.	\$0.25
Bushy, 18 to 24 ins.	.35
Flowering Crab, 2-yr. grafts,	
5 to 6 ft.	.65
Hopa and Eleyl, 4 to 6 ft.	.50
Tree Wistaria, 3 to 4 ft.	3.00
Staked Plants, 2 to 3 ft.	2.25

THE Southern
Nursery & Landscape Co., Inc.
WINCHESTER, TENNESSEE

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temperature was held steadily in the fall, from about March 8 to December 6. During this period, the temperatures both inside and outside were fluctuating, and, therefore, averages of the maximum and minimum temperatures are used to describe the conditions.

The daily average maximum-minimum temperature in readings made in 45-day periods showed that the average temperature was approximately six degrees lower inside than outside in both storages. Closer comparison revealed an average condition of about three degrees higher temperature outside than inside, with a range of daily difference up to twelve degrees. Two other methods used to study storage temperatures also showed that the temperature inside the storage averages lower than that outside.

When records were started late in March, the electric heater had been disconnected, but the cutout thermostat was still operating to stop ventilation at a temperature of 32 degrees. Inside temperatures were at or lower than 32 degrees plus or minus one degree for thirteen of twenty-four days until April 19. On all but four days it was below 40 degrees. From April 19 to October 18 the storage temperature was usually at or above 40 degrees. From June 1 to October 4 it was above 50 degrees.

When loading stock for storage in the fall, if harvested materials are cooled overnight outside the storage, there is little disturbance of the storage air temperature when the material is loaded in the morning. During winter and spring the load will serve to smooth inside temperatures and reduce the effectiveness of short periods of late-spring, low-temperature air.

Since an accurate winter control of approximately plus or minus one degree of temperature over the desired figure in an aboveground common storage can be obtained with an automatic ventilation system, the principal weakness of these storages is the variation in the date when the temperature of 32 degrees can be reached and maintained in the fall season. For example, this date at Guelph has varied between October 15 and December 1 during the past twenty years.

Proper humidity is also important to the stored product. The excessive ventilation needed in fall and spring results in desiccation of the storage load unless sufficient water is evaporated into the storage air. Even in winter, when ventilation is

FRUIT TREES

Apple, 1 and 2-yr., Dwarf and Standard.

Pear, 1 and 2-yr., Dwarf and Standard.

Plum, 1 and 2-yr.

Sweet and Sour Cherry, 1 and 2-yr.

Quince, 2-yr.

Apricot, 2-yr.

Peach, 1-yr.

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If you have never tried our stock, give us a trial order.

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reduced, the humidity may be too low. Storages should be constructed so that the floors can be kept constantly wet to maintain relative humidity above ninety per cent. Where this method is undesirable, fog nozzles may be used and may be controlled manually or by a humidistat.

SOUTHWESTERN NEWS.

The address of the Topeka Evergreen Nursery, Topeka, Kan., has been changed to 4201 Sena drive. This is not a change in location, but in the name of the street from Hillsdale to Sena, renumbering.

One of the best attended meetings of the Kansas City Nurserymen's Association was held at the Wagon Wheels restaurant, Overland Park, Kan., October 10, with thirty-two present. After a dinner highlighted by quantities of fried chicken, a brief business session was conducted by Virgil C. Bodine, president. Hugh O'Connell, of the Kansas City park department, told of recent discoveries in the study of elm diseases. E. Asjes, Sr.; who with Mrs. Asjes had recently returned from Europe, described their travels through Holland, Belgium, France and Germany.

Ralph Burt, Garden City Nursery, Garden City, Kan., has added to his lath houses, and now he has a total of 15,000 square feet under shade.

The Kansas Landscape & Nursery Co., Salina, Kan., has leased forty acres of land adjoining the city for the production of nursery stock.

The department of horticulture at Kansas State College, Manhattan, has let a contract for the construction of two new greenhouses, 28x83 feet, connected by a 17-foot glass passageway. These greenhouses will be used for instructing students in plant propagation.

Profs. L. R. Quinlan and Ray Keen, Kansas State College, appeared on the program of the state garden club convention at Parsons, October 19.

Recent roadside improvement contracts let in Kansas are as follows: Cook & Cone, Ottawa, \$10,502, in Cheyenne and Marion counties; Deer Landscape Co., Neodesha, \$4,322, in Shawnee and Wabaunsee counties; Tole Landscape Service, Independence, \$5,687, in Allen and Bourbon counties.

WHILE W. B. Frederick, Frederick's Nursery, Dallas, Tex., is in the local veterans' hospital for a general checkup, his wife is managing the nursery, on North Hampton road.

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Tsuga Canadensis.
Ilex Opaca. Per 100 Per 1000
6 to 9 ins., tr. xx. \$ 9.00 \$ 80.00
9 to 12 ins., tr. xx. 13.00 120.00
12 to 15 ins., tr. xx. 16.00 150.00

Abelia Grandiflora.
Hydrangea Paniculata Grandiflora.
6 to 12 ins., 1-yr., C. 7.00 65.00
12 to 18 ins., 1-yr., C. 11.00 100.00
18 to 24 ins., 2-yr., br. 15.00

Cornus Florida. Each
2 to 3 feet, well br. \$0.20
3 to 4 feet, well br.30
4 to 5 feet, well br.45

Native Shrubs and Evergreens

Tsuga Canadensis. Per 100 Per 1000
3 to 6 ins., s. \$0.75 \$ 6.00
6 to 9 ins., s. 1.50 10.00
9 to 12 ins., s. 2.50 20.00
12 to 18 ins., s. 4.00 35.00
18 to 24 ins., s. 6.00 55.00

Ilex Opaca.
Rhododendron Maximum.
Kalmia Latifolia.
3 to 6 ins., s. 2.00 15.00
6 to 9 ins., s. 3.00 25.00
9 to 12 ins., s. 4.00 35.00
12 to 18 ins., s. 5.00 45.00
18 to 24 ins., s. 6.50 60.00

Kalmia Latifolia. Each Each
Rhododendron Maximum. per 10 per 100
12 to 18 ins., heavy br. \$0.20 \$0.15
18 to 24 ins., heavy br.25 .20

Azalea Calendulacea.
Azalea Nudiflora.
12 to 18 ins., liners.07
12 to 18 ins., heavy br.12 .10
18 to 24 ins., heavy br.17 .15

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CALIFORNIA ASSOCIATION OF NURSERYMEN

ELMER J. MERZ, Executive Secretary
304 MITAU BUILDING SACRAMENTO 14, CALIF.

SUPERIOR CHAPTER ELECTS.

Fred Fick, East Lawn Nursery, Sacramento, was elected president of the Superior chapter of the California Association of Nurserymen when the members met during September.

Other officers elected were Jerrold Vistica, Vistica Nursery, Live Oak, vice-president; C. M. Staats, Sierra Gardens & Nursery, Sacramento, secretary-treasurer; Adna R. Doll, Balkow Nursery, North Sacramento; Richard B. Barlow, El Adobe Garden Shop, Davis; C. M. Staats, Sierra Gardens & Nursery, Sacramento; Maynard Chapman, Sacramento, and Richard Oki, Oki Nursery, Perkins, directors.

CENTINELA CHAPTER MEETS.

Members of the Centinela Valley chapter of the California Association of Nurserymen held its monthly dinner meeting October 16 at Inglewood. After a steak dinner, President Jack Beeler introduced the guests, including Mr. and Mrs. Jay Hollander; William Clark, president of the California Association of Nurserymen, and Elmer J. Merz, executive secretary of the state group.

Mr. Hollander told why good accounting practices are so much more important today, because of the complexity of modern business. He also pointed out the fact that only through proper accounting methods could one analyze and determine when a firm was making or losing money from month to month.

Mr. Clark suggested that the various chapters in southern California should have a combined Christmas party. The chapter members favored the idea and also decided to hold a chapter party. David Eisenberg, of Gramercy Park Nursery, Los Angeles, volunteered to be chairman of the party, which will be held on the evening of December 11.

The subject of nurseries' closing one day a week was discussed at length. Mr. Merz brought out the fact that the weekly closing was working out well in the bay area, and he recommended that chapter members introduce the subject at the joint directors' meeting to be held November 16.

Mr. Clark said most newspaper publishers realize the great demand for a garden page in their publications and are in need of articles of general garden information. Nurserymen are the logical source for this information; by providing it, they would gain valuable free publicity.

For the January meeting, Clint Peterson, Peterson Bros., Inglewood, was asked to secure a speaker. Loring L. Bigelow, Newcoast Nursery, Torrance, was appointed to obtain a safety film to be shown at the February meeting.

F. A. Seright, Sec'y.

SAN FERNANDO VALLEY INSTALLS OFFICERS.

William S. Clark, president of the California Association of Nurserymen, presided at the installation ceremonies October 11, when seventy-three members and guests of the San Fernando Valley chapter of the California Association of Nurserymen met at Kovers' Bull Pen, Sherman Oaks, to install of-

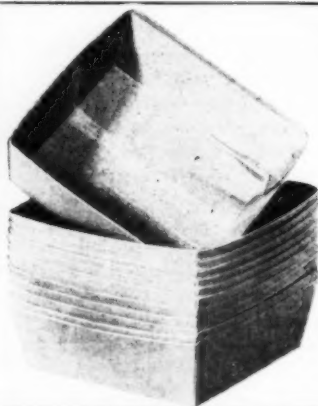
ficers for the ensuing year and to enjoy a buffet dinner.

Julian Herman, Universal Nursery, North Hollywood, was elected president; Donald Snyder, Snyder's Nursery, North Hollywood, sergeant at arms, and Betty Howe, Devonshire Nursery, San Fernando, publicity chairman. Reelected were James Harris, Palmdale Nursery, Palmdale, vice-president, and Jean Powell, Green Arrow Nursery, Van Nuys, secretary-treasurer.

Newly elected directors were Edwin Schneider, Ed's Nursery, North Hollywood; Ken Moordigian, Sylmar Nurseries, San Fernando; Ben Thrasher, Thrasher's Nursery, San Fernando; Garney Q. Gee, Rancho Nursery, Van Nuys, and Alfred Boulton, Woodland Hills Nursery, Woodland Hills.

Just before the installation of officers, the retiring president, Edwin Schneider, presented Mr. Clark, who is a charter member of the chapter, with a lifetime membership. Elmer Merz, executive secretary of the state association, spoke briefly on the subject, "What the State Association Does for the Nurseryman." Martin Usrey, of Monrovia Nursery Co., Monrovia, recently elected president of the Los Angeles chapter of the California Association of Nurserymen, was also introduced.

In his acceptance speech President Herman stressed the importance of good-fellowship among all



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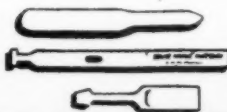
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nurserymen and the need for every member to abide by the standards established by the state association.
Jean Powell, Sec'y.

SUNSET CHAPTER ELECTION.

The Los Angeles Sunset chapter of the California Association of Nurserymen planned to hold an election of officers following the monthly dinner meeting, November 13, at Carl's restaurant, Los Angeles. New officers and directors were to be elected for the chapter, which was organized a year ago, according to James A. Gibbs, Winsel-Gibbs Seed & Nursery Co., secretary-treasurer. A. K.

CALIFORNIA SHOW PLANS.

The final schedule for trade exhibits in the California international flower show has been completed and distributed, according to announcement by Roy F. Wilcox, general chairman.

The exhibition, which is sponsored by the Southern California Horticultural Institute, Inc., and the Southern California Floral Association, will be held at Hollywood park, Inglewood, Calif., March 3 through March 11, 1951.

Features of the show will include gardens, cut flowers, pot plants, table arrangements, garden sculpture, garden furnishings, garden pools, landscape architects' exhibits and retail florists' exhibits.

Total awards for the show have been increased to \$35,000, with individual awards ranging as high as \$1,000. No fee is charged for entry or for space occupied by exhibits.

Landscape exhibits for nurserymen, covering garden scenes, are in fourteen classes, half of which are for exhibits requiring more than ordinary preparation, skill in design, exceptional plant material and elaborate backgrounds. The exhibitor is allowed widest latitude subject to management approval of design and construction. Prizes in these classes are thirty-eight in number for a total in excess of \$10,000.

Information regarding exhibits and conditions for displaying plants and flowers can be obtained by addressing William A. Rodman, general manager, California International Flower Show, Hollywood park, Inglewood, Calif.

PLAZA GARDENS is the name of the retail salesyard that the Verhalen Nursery Co., of Scottsville, Tex., has opened on Buckner boulevard, at Garland road, Dallas, Tex.

30,000 DORMANT HYDRANGEAS

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For Forcing or Garden Planting

Ami Pasquier	Pink	Kuhnert	Blue
Blue Prince	Blue	Strafford.....	(Top), Pink
Gertrude Glahn.....	Pink	Regular.....	(Very fine), White

3 canes	35c
4 to 5 canes	45c
6 canes and up	50c

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Pecans with branched and fibrous roots.

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HOWARD ROSE COMPANY

P. O. Box 725

Hemet, California

CHARLIE CHESTNUT.

[Continued from page 14.]

was on the road selling nursery stock. I'll get it." And with that he started over to the house.

He came back with the book and handed it to me. "Elocution Self Taught," it said on the cover. It was printed in 1907 and started off with a diagram showing how to stand up to the audience and how to hold your stomach and it said to smile and show your teeth.

"This is going to be bad for you, Emil," I says, "if you smile too wide your plate might slip out and furthermore your stomach is too far out of hand to be pulled in to any extent," I says.

"Turn over to where it tells about making talks, Chas. See what it says about holding the audience," Emil says.

"Here is a page shows Lincolns Gettysberg Address with gestures. How are you on gestures, Emil?" I says.

"Cut out the nonsense and get down to business," Emil says, "that meeting is a week from Tuesday and we got a lot of work to do to get this talk in shape. Throw down that book and read what you got in your notes."

"So far it says, Fellow Members of the Civic Club, (funny story), thats all I got so far," I says.

Thats as far as we got that day, as Emil had to go down to the bank

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REDWOOD TREE for XMAS

Sierra SEQUOIA, grows in all but No. N. Eng., Colo., Mont., Wyo., N. D., S. D.,—many 100 yrs. old NOW in E. & So. U. S. List of these live Redwood Trees FREE. Price potted, postpaid in U. S.—1 ft., \$3.95—1½ ft., \$4.95—2 ft., \$5.95. World's only book on HOW to Grow (16pp.)—50c. Order EARLY—be sure. 15 species "Redwoods"—many never in U. S. **RARE PLANT CLUB • Box 127 AN • KENTFIELD, CALIF.**

and by the time he stopped in at Steamboat Fultons Bar for a corn-beef sandwich, and chewed the rag there for a while, I knew there wouldnt be any more time to work on the talk that day.

Next morning he was there bright and early and had the fire going in the office. "Start off with a clean sheet, Chas., and lets get that talk finished," he says.

"It aint no trouble to finish it," I says, "the hard part is to get it started. All the stuff we got so far is just the ladies and gents part and the funny story, the blank space that is, if we can think of a funny story the members aint heard yet. Are you going to read it off the paper or memorize it, Emil?" I says. "A good way is to have a few notes hid in your hand, Emil, so you can sneak a look now and then, if you forget the hang of it," I says.

"Main thing is to get it written first, Chas.," he says. "I'll make up my mind on if I will memorize it later."

Emil sat there for 20 minutes and just looked out the window. He was thinking, so I didnt say nothing. Finally he says, "Theres about 500 Wilder Currant there back of the cornerib I would like to get rid of, as they are five years old. Im going to start off the talk telling the members why everybody should plant currants. Now we're getting some place. Put that down, Chas. Everybody plant currants, raise their own jelly and cut down on the cost of groceries. Thats a good start. Then I'll jump right into the other small fruits. Make a note on rhubarb. Better make it Victoria as we are out of the pink rhubarb and we're stuck on Victoria."

"I thought the nursery inspector told you to burn up those currants, Emil," I says, "they been full of the 7 year itch for the last three years."

"The inspector tells everybody that," Emil says. "If the nurserymen done everything the inspector told them, they would be out of the nursery business in no time. I will go to work and make a special price on the currants as a favor to the civic club members," Emil says.

"Thats one thing Morse told you, Emil, he says you cant solicit business in your talk. Just make it informative and general, Morse says and he's the president of the club. Why dont you bring that stuff up in the question and answer period? That aint part of the talk and Morse couldnt say nothing. I'll get Red to get up and ask the price of the currants after the talk," I says.

"Thats a good idea, Chas. Make



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MAHONIA AQUIFOLIUM

(Oregon-Washington Holly-Grape)

A very beautiful evergreen shrub with large, glossy leaves and yellow flowers appearing conspicuously in spring and followed by dark blue berries. A most satisfactory broad-leaved evergreen for any place in the United States.

1-yr. seedlings, field-grown, row run,
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No packing charge if check sent with order. All other orders shipped C.O.D. Place your orders now for Fall, 1950, or Spring, 1951, delivery.

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Climbing Plants.

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CAMELLIAS and AZALEAS

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a note about the question period. Better have a list of questions ready to hand out to some of the members that will do us a favor and get up after the talk and ask different stuff. You might have Doc Hart ask me what I think of honeysuckle for a all around shrub. I dont need no notes for that, I can fill in a good half hour on that alone, if I have a chance," Emil says.

"Now lets see, we got the small fruits covered," Emil says. "lets get on to the perennials. What have we got the most of, Chas.? We got to consider that angle in all the things we put in the talk. How about hollyhocks, there must be five thousand growing along the lane to the pasture. We could call em choice mixed. Put down that I consider the hollyhock the best all around perennial. Make a small note on tiger lily and myrtle too. We got beds of that so we could furnish clumps to everybody in Riverbend and never miss it." Emil picked up his pencil and started figuring. "Lets see, if I sold 50 members each 5 currants," he says, "and also 10 hollyhocks, then I wouldnt feel so bad about the time it takes to make up a talk. Get that all down, Chas., in the notes," he says.

"How long they going to give you on the program, Emil?" I says.

"Morse told me they got a cornet solo and two or three songs by the grade school girls and then a talk by Doc Hart on the hoof and mouth disease in Mexico, and then I come and after that is the lunch. Morse says to cut it down all I can, probably about 15 minutes at the most. How much have I got down now, Chas.?" he says.

"If you talk slow and put in one or two more jokes it might run four minutes," I says.

"Four minutes," he says. "According to that we will be all winter getting the rest of it ready. Lets get on now with the shade trees. What are we long on besides soft maples, Chas.?" he says.

"Catalpa is one thing we are stuck on, Emil," I says. "You might give a few words on that, telling about the beautiful flowers, etc. Then we got that block of russian mulberry if they aint too big to move," I says.

"That gives me an idea for the question and answer period," Emil says. "Have a question ready if I ever let people dig their own stuff. Then I can come in with the catalpa and mulberry. Sure would like to move them mulberry, we would have to cut out every other one, but if the customers dig their own, its their own hard luck if the stuff dont come



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out too easy. Make a note on all that, Chas., and lets get on to the evergreens," he says.

"Aint you going to say anything about the elms and maples and all the other shade trees, Emil?" I says.

"What the members dont know wont hurt them," Emil says, "if they get the idea that the main trees is catalpa and mulberry thats what there going to be asking for. You got to think of them things, Chas. And besides in 15 minutes we cant cover the complete line, just hit the high spots. Why wouldnt that be a good name for the talk, Hitting the High Spots in the Nursery Business. Put that down, Chas., thats what I'll call the talk."

"Now we are down to the evergreens," I says, "what you got in mind for that, Emil?"

"Well Chas., you know as well as I do you cant beat the Norway spruce for the best all around evergreen. Put that down," Emil says.

"There all around as far as this nursery is concerned," I says, "we got em all over the place in sizes 6 feet to 25 feet," I says.

"You might add Irish Juniper too, Chas.," Emil says, "we're long on that and in case some of the members dont like spruce they can have their choice and take Irish Juniper. What other kind of stuff should we put down, Chas.?" Emil says, "how about fruit trees."

"O. K.," I says, "fruit trees, what about 'em?" I was getting a little tired of the whole thing.

"In the first place I can tell the members that an apple a day keeps the doctor away and that will get a laugh," Emil says.

"From who?" I says. "People have heard that every day for the past 100 years. Forget that and put in a good joke here in the talk, so as to catch the interest of some of the members who may not be paying any attention. I'll put that down in parenthesis (joke)," I says.

"Well lets see maybe we can leave out fruit trees, somebody can call my attention to it in the question and answer period if anybody is interested. We should not overlook the foundation planting. Maybe we should put that ahead of rhubarb, but let it go. Now in regards to the landscape department, put down some of the best places in Riverbend was designed by me, like Morses, that will make a big hit with Morse. Write that down, Chas., and that ought to about wind it up. If I take them notes and run over them a few times I can memorize the talk and get my gestures in without hav-

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ing to wave the paper at the same time," Emil says.

Well now Mr. White you are welcome to the material we worked up. As I said in the beginning, its a fresh talk, never been given, so any of the members can be the first to use it in their own town. Emil is sore now and he says he aint never going to give a talk again, so you might as well have it.

Yours truly,
Chas. Chestnut.

NEW GROWTH CONTROL.

The discovery of plant growth-regulating properties in several different chemicals based on nicotine has led scientists of the United States Department of Agriculture responsible for it to see a possibility of using these chemicals in growing sturdier transplants. After investigation of the reactions of bean seedlings, it was discovered that lengthening of the stems of treated plants was retarded, and stockier plants were produced both in light and darkness.

Most effective of the chemicals tried was 2,4-dichlorobenzylnicotinium-chloride, which is shortened to 2,4-DNCL.

With seedlings grown in the light for thirteen days the treatments resulted in shorter plants just above the seed leaves. The length of treated plants was 59.7 per cent below that of the untreated. All treatments brought shorter over-all height for all plants.

Although these laboratory results were striking, investigators consider them to be merely opening up new possibilities, since the tests were small and conditions were artificial. They cannot be considered conclusive as yet, according to investigators, John W. Mitchell and J. W. Wirwille, of the plant industry station at Gainesville, Fla.

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Armstrong Nurseries, Ontario, Calif.—Roses; illustrated, 24 pages, 8½x11½ inches.

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Nursery Labor Market

By Harold H. Clegg

Compared with most industries, nurseries have their peculiar labor problems. Nurseries depend more on personal contacts with employees to secure efficiency, certainly, than do manufacturers. The "logics" or goals of management are claimed by unions to be different from those of labor. Labor owes its loyalty to the union, whereas the nonunion nursery must appeal to other motivation to secure loyalty of employees.

As a result, most progressive nurseries are today offering some plan of advancement at least to key employees and foremen. Some nurseries offer a percentage of the job gross to the designer, to the landscape foreman and to the landscape crew. Other nurseries bypass profit-sharing for a wage scale in which an employee may aspire to advance in wages or salary.

Hundreds of wage policies exist in nurseries and landscape outfits, attempting in some manner to compete with the wage scale and steady employment of industry in general. Some nurseries, in view of the seasonal nature of their business, are satisfied with transient labor of undependable quality, hoping to get some efficiency from a supervisory staff kept on an annual wage basis. The success of management with labor appears to be in proportion to the realistic handling of the peculiar problems of nursery ownership.

Over the past twelve years I have made periodic visits to one of the most successful nurseries in our country. I have been aware of a consistency of policy in the management of this nursery, and I was prompted during my last visit to this nursery to ask its manager what policy he followed in keeping men on the payroll when rainy days interrupted operations. He replied that those men who came to work faithfully and promptly, avoiding absenteeism, were given something to do indoors. It might be some job which the employee was not adapted to do efficiently, but he was not sent home as were the job-jumpers. This policy had, no doubt, appealed to the reason of the employee as well as management. At least, it is the sort of policy followed by any responsible management. It illustrates the rewarding of faithful employees on which this firm has leaned heavily (as do most nurseries) on personal loyalty.

I realize that such a policy of personal treatment is contrary to union idealology, and I wish I were aware of sample cases of survival of nurseries run in line with union policies, but I do not. The rarity of unions in the landscape business suggests that the owners feel that such a basis is out of question in their industry. The nonessential nature of our business rules out deferments and priorities and, worst of all, shuts off all but the dregs of transient labor to such as we.

Nursery managements are, therefore, casting about today for solutions to survival in wartime. In a pinch, nurseries can suspend their lining-out programs and hope, at best, to protect their investments in the field. They must decide what upward revisions to make in wage scale to attract replacements for the employees they are losing to the draft and to other industries. Landscape contractors without nurseries can

curtail or suspend operations for the duration much better than can growers.

However, some nurserymen anticipate that the duration of this emergency is indefinite and that the pattern of World War II may not be a reliable guide on what to do today. As a result, some nurseries are planning on a retrenchment without even the assurance that they can maintain the integrity of their investment in plant materials. We see some raiding of other nurseries for labor, a temporary expedient. We see others attempting to train replacements with tongue in cheek. Who will succeed? Undoubtedly those managements which are realistic in their analysis of the labor market. Those nurseries with good employee relations and with good financial stability can hope to carry on after a fashion. But quick adjustments must be made to cut overhead and rid the organization of the trappings appropriate to normal business and stock turnover.

A nursery having a good capital structure, with not too much tied up in inventory, may ride out such con-

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ditions. The capital investment in stock can be protected if the nursery is in a position to pay for essential operations to maintain the plant materials. Moreover, the nursery with good employee relations can hope best to carry on under present and future competitive conditions.

BLUEBERRY DISEASE CARRIER FOUND.

The carrier of stunt disease, a virus which has seriously threatened the cultivated blueberry bush industry, has been discovered by W. E. Tomlinson, Jr.; P. E. Marucci, and C. A. Doehlert, workers at the blueberry research center, at Pemberton, N. J., to be two species of sharp-nosed leaf hopper. The disease has been the greatest menace that blueberry growers have had to face, according to Mr. Doehlert.

Now that the carriers, *Scaphytopius magdalenensis* and *S. verecundus*, are known, they can be combated by spraying and dusting. Heretofore, there was no known way to combat the disease, except by removing diseased plants from the fields. The carrier insects, which suck the juices from the plants, have two broods in New Jersey, one in late June and early July and the other in late September and early October.

The effects of the disease, which has been found on all named varieties, are general stunting of the bushes, which develop many short, slender twigs with abnormally colored leaves, and an absence of new whips. There is a loss of production because the plant does not set a normal number of fruit buds. In late stages of the disease, plants become mere clumps of leafy twigs, which will never be able to bear fruit again. The experiment station has found methods of quickly discovering the symptoms, however, so that growers can remove diseased plants before they spread the disease through the fields.

Although all varieties are susceptible to this disease, Rancocas, Stanley and Harding appear to be resistant. Jersey shows a marked tolerance for the disease.

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Boysenberry, Thornless, Trans.....13.50 125.00

Write for prices in quantity lots and our complete trade list of small fruit plants, ornamentals and lining-out stock.

W. N. SCARFF'S SONS
New Carlisle, Ohio

DURHAM RED RASPBERRY.

(A New Hampshire Station Introduction.)
The best early fall-bearing raspberry available today. Bears on old canes July and August and on new canes from late August through October in this state. A good propagator. New canes will bear crop next fall.

	Per 100	Per 1000
Small sucker plants.....	\$ 8.00	\$ 75.00
No. 1 sucker plants.....	12.00	112.00
Transplants.....	16.00	144.00

On orders of 25 plants, postpaid, add 50c for postage.

PINE-CROFT NURSERIES Exeter, N. H.

Strawberry Plants, double-inspected.
Aroma, Blakemore, Klommore, Dunlap, Missionary and Robinson, \$5.00 per 1000.
Everbearing Streamliner and Superfection, \$12.50 per 1000. Gem, \$10.00 per 1000. Progressive, \$8.00 per 1000.

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Harrison, Tenn.

Thornless Boysenberry tip plants, ready to ship now.....\$22.50

Blakemore Strawberry plants.....3.50
5000 to 10,000 everbearing tree Blackberry plants.....65.00

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BLUEBERRY PLANTS.

High-producing varieties free from disease. Fully inspected. Shipments made either fall or spring to any address. Prices on request. Your business solicited and handled with reliable service.

J. R. SPELMAN CO. South Haven, Mich.

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Gem Everbearing, Mastadon Everbearing, Blakemore, Tenn. Supreme, Premier, Aroma. All \$6.00 per 1000.

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RASPBERRY PLANTS—Indian Summer, St. Regis, Sunrise, \$7.00 per 100.

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HOLLAND-GROWN BULBS.

DARWIN TULIPS, 11 to 12 cm., \$5.00 per 100. Bleu Aimable (blue), La Tulipe Noire (brownish-black), William Pitt (red), Helen Eakin (white), Rose Copland (rose), Sun-kist (yellow), Pride of Haarlem (red), After-glow (apricot), Bartington (red), Yellow Giant (yellow), William Copland (lavender), Prunus (pink).

HYACINTHS, 18 to 17 cm., \$12.00 per 100. Gertrude (pink), L'Innocence (white), Bismarck (blue), City of Haarlem (yellow), King of the Violets (purple).

CROCUS, 7 to 8 cm., \$2.00 per 100. King of the Blues (blue), Golden Yellow (yellow), Striped Beauty (white and blue), King of the Whites (white).

MUSCARI (Grape Hyacinth), 7 to 8 cm., \$2.00 per 100.

DUTCH IRIS, \$5.00 per 100. Yellow Queen (yellow), 8 to 9 cm., Excelstor (white), 7 to 8 cm.

WEDGWOOD IRIS, 9 to 10 cm., \$5.00 per 100.

DAFFODILS (Rounds), King Alfred, \$6.00 per 100.

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Rogers, Ark.

HARDY NORTHERN-GROWN LILY BULBS.

New, rare, scarce and unusual as well as standard varieties.

New wholesale list now ready.

Send for your free copy.

J. HENDRIKS, Grower, Portage, Mich.

DOUBLE TIGER LILIES.

4 to 6 ins., \$ 0.00 per 100; \$99.00 per 1000.

THE EVERGREEN NURSERIES, Lowell, Ind.

CAMELLIAS

CAMELLIAS.

Special Prices on the Following Varieties:
Alba Plena, Anna Frost, Bonnie Bee, Caleb Cope, Cameo Pink, Chandleri Elegans, Countess of Orkney, Elizabeth, Gloire de Nantes, K-lingtonia, Monarch, Pink Perfection, Prof. Sargent, Sarah Frost, Pope Plus IX, Tricolor; 6 to 8 ins., 15c each; 12 to 18 ins., 25c each.

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NATIONAL NURSERIES

Dept. A, Biloxi, Miss.

EVERGREENS

LINING-OUT STOCK.

	Per 100
Juniperus andorra compacta, 2-yr., beds, 8 to 12 ins.....	\$35.00
Juniperus glauca, 2-yr., field, 8 to 12 ins.....	37.50
Retinospora plumosa aurea, 2-yr., beds, 8 to 12 ins.....	30.00
Thuja occ. lutea, 2-yr., beds, 8 to 12 ins.....	35.00
Thuja occ. spiralis (Douglas Pyr.), 2-yr., beds, 8 to 12 ins.....	35.00
Thuja pyramidalis, 2-yr., beds, 8 to 12 ins.....	35.00
2-yr., beds, 12 to 15 ins.....	42.50
2-yr., beds, 15 to 18 ins.....	50.00
Thuja woodwardi (Globe), 2-yr., beds, 6 to 10 ins.....	35.00
Thuja elegantissima, 2-yr., beds, 8 to 12 ins.....	35.00
Aralia pentaphylla, 12 to 18 ins.....	8.00
Aralia pentaphylla, 18 to 24 ins.....	10.00
Corylus americana, S. 6 to 12 ins.....	6.00
Cornus amomum, H.C., 9 to 12 ins.....	6.00
Deutsia P. of B., H.C., 9 to 12 ins.....	4.00
Foreythia Spring Glory, H.C., 9 to 12 ins.....	6.00
Hydrangea, P.G., No. 1 layers, \$70.00 per 1000.....	9.00
Juglans regia (hardy English Walnut), S. 10 to 15 ins.....	30.00
Lonicera fragrantissima, H.C., 9 to 12 ins.....	5.00
12 to 15 ins.....	7.00
Lonicera tatarica rubra (Wheeling), H.C., 9 to 12 ins.....	4.00
12 to 15 ins.....	6.00
Phil. coronarius, H.C., 9 to 12 ins.....	4.00
Phil. coronarius, H.C., 12 to 15 ins.....	6.00
Phil. virginialis (true strain), H.C., 9 to 12 ins.....	12.00
12 to 15 ins.....	15.00
15 to 18 ins.....	17.50
Platanus acerifolia, H.C., 12 to 15 ins.....	8.00
Platanus acerifolia, H.C., 15 to 18 ins.....	9.00
Platanus acerifolia, H.C., 18 to 24 ins.....	10.00
Populus nigra italica (Lombardy Poplar), H.C., 9 to 12 ins.....	3.00
12 to 15 ins.....	3.50
15 to 18 ins.....	4.00
18 to 24 ins.....	4.50
2 to 3 ft.....	6.00
Rosa hugonis, H.C., 9 to 12 ins.....	6.00
Rosa hugonis, H.C., 12 to 15 ins.....	8.00
Salix purpurea nana (Arctic Willow), H.C., 9 to 12 ins.....	6.00
12 to 15 ins.....	9.00
Spiraea Vanhouttei, H.C., 9 to 12 ins.....	4.00
Spiraea Vanhouttei, H.C., 12 to 15 ins.....	6.00
Weigela Eva Rathke, grafts, 1-yr. field-grown, 9 to 12 ins.....	12.00
1-yr. field-grown, 12 to 15 ins.....	14.00
1-yr. field-grown, 15 to 18 ins.....	16.00
Weigela henderaoni, H.C., 9 to 12 ins.....	4.00
12 to 15 ins.....	5.00
15 to 18 ins.....	6.00
Weigela vanicekii, grafts, 1-yr. field-grown, 9 to 12 ins.....	14.00
1-yr. field-grown, 12 to 15 ins.....	16.00
1-yr. field-grown, 15 to 18 ins.....	18.00

CHAMPION NURSERIES

Perry, Ohio

THUJA SEEDLINGS.

	Per 100	Per 1000
Thuja orientalis tatarica, 2-yr., 6 to 9 ins.....	\$3.00	\$25.00
Thuja orientalis aurea, 2-yr., 6 to 9 ins.....	3.00	25.00

These seedlings will make valuable stock with variations in color and type.

THE HARRIS GARDENS Enterprise, Kan.

Buxus suffruticosa (English Boxwood), Per 100 Per 1000

4 to 6 ins.....\$18.00 \$150.00

6 to 8 ins.....25.00 225.00

Virginia-grown. Nice compact plants.

GULF STREAM NURSERY, Inc.
Wachapreague, Va.

EVERGREENS.

	Per 100	Per 1000
Blota aurea nana globosa, 6 to 8 ins. F.G. heavy.....	\$25.00	
Ilex rotundifolia, 12 to 15 ins. F.G., heavy.....	30.00	
Ligustrum lucidum, 10 to 12 ins. F.G., heavy.....	17.00	\$160.00
12 to 18 ins. F.G., heavy.....	27.50	250.00
Blota fruitlandi (Berckmans Green), 6 to 8 ins. F.G., heavy.....	32.50	
8 to 12 ins. F.G., heavy.....	40.00	
Juniperus hetzi, 8 to 10 ins. F.G., heavy.....	27.50	
10 to 12 ins. F.G., heavy.....	30.00	
12 to 15 ins. F.G., heavy.....	40.00	
Irish Juniper, 12 to 15 ins. F.G., heavy.....	25.00	
15 to 18 ins. F.G., heavy.....	30.00	
Thuja (Berckmans Golden), 6 to 8 ins. F.G., heavy.....	27.50	250.00
8 to 10 ins. F.G., heavy.....	35.00	325.00
10 to 12 ins. F.G., heavy.....	40.00	375.00
Blota bonita, 8 to 10 ins. F.G., heavy.....	27.50	250.00
8 to 10 ins. F.G., heavy.....	35.00	325.00
10 to 12 ins. F.G., heavy.....	40.00	375.00
Thuja orientalis bakeri, 6 to 8 ins. F.G., heavy.....	25.00	225.00
8 to 12 ins. F.G., heavy.....	27.50	250.00
15 to 18 ins. F.G., heavy.....	30.00	275.00
Thuja orientalis conspicua, 6 to 8 ins. F.G., heavy.....	25.00	
8 to 12 ins. F.G., heavy.....	30.00	
Abelia grandiflora, 12 to 15 ins. F.G., heavy.....	17.50	
Eucunymus patens, 12 to 15 ins. F.G., heavy.....	17.50	
Eucunymus japonica, 12 to 15 ins. F.G., heavy.....	17.50	
All plants planted from pots to field, 25 per cent with order, balance C.O.D. when shipped.		

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Wellman Ave. Huntsville, Ala.

LINING-OUT STOCK.

	Per 100	Per 1000
Scotch Pine, 2-0, 3 to 8 ins.....	\$ 3.00	\$ 25.00
Scotch Pine, Riga, 2-0, 3 to 6 ins.....	3.50	30.00
Austrian Pine, 2-0, 3 to 6 ins.....	4.00	35.00
Mugho Pine (Dwarf), 2-0, 2 to 4 ins.....	3.00	25.00
Mugho Pine (Dwarf), 3-0, 3 to 6 ins.....	5.00	45.00
Mugho Pine (Dwarf), 2-1, 2 to 4 ins.....	5.00	45.00
Table Mountain Pine, 2-0, 2 to 4 ins.....	2.50	20.00
Table Mountain Pine, 3-0, 3 to 6 ins.....	4.00	35.00
Norway Spruce, 3-0, 3 to 6 ins.....	3.50	27.50
Norway Spruce, 2-1, 3 to 6 ins.....	5.50	50.00
Norway Spruce, 2-2, 6 to 10 ins.....	5.00	75.00
Colorado Blue Spruce, 2-1, 2 to 4 ins.....	4.50	40.00
White Spruce, 2-0, 3 to 6 ins.....	3.00	25.00
Black Hills Spruce, 3-0, 3 to 6 ins.....	3.00	27.50
Black Hills Spruce, 3-1, 2 to 6 ins.....	5.00	45.00
Black Hills Spruce, 2-2, 3 to 6 ins.....	6.00	65.00
Black Hills Spruce, 3-2, 4 to 8 ins.....	7.00	65.00
Black Spruce, 2-3, 8 to 18 ins.....	12.00	110.00
Balsam Fir, 3-0, 2 to 4 ins.....	3.00	27.50
Oriental Arborvitae, 1-2, 6 to 18 ins.....	10.00	85.00
Dwarf Oriental Arborvitae, 1-2, 6 to 12 ins.....	10.00	90.00
Pyramidal Oriental Arborvitae, 1-2, 6 to 12 ins.....	10.00	90.00

For complete list write to
JOHN G. ZELENKA
Rt. 2, Box 293 Grand Haven, Mich.

EVERGREEN LINERS AND CUTTINGS.

FALL TRADE LIST, 1950.

POT-GROWN EVERGREEN LINERS.

	Each	Per 100	Per 1000
Juniperus virginiana burkii, 1-yr., 4 to 5 ins., own root.....	\$0.27	\$0.25	
Juniperus chinensis pfitzeriana, 1-yr., 4 to 5 ins.....	.20	.18	
Juniperus hetzi glauca, 1-yr., 4 to 5 ins.....	.20	.18	
Arborvitae, Pyramidal, 1-yr., 4 to 5 ins.....	.18	.16	
2-yr., field-grown.....	.27	.24	
Arborvitae, Globe Woodward, 1-yr., 3 to 4 ins.....	.17	.16	
Arborvitae, American Dark Green, 2-yr., 4 to 5 ins.....	.20	.18	
Taxus media hickel, 2-yr., 5 to 8 ins.....	.20	.18	
1-yr. beds, 5 to 6 ins.....	.15	.14	

HEAVY ROOTED CUTTINGS.

From flats, rooted outside in lath house.

	Each	Per 100	Per 1000
Juniperus communis hibernica.....	\$0.08	\$0.07	
Juniperus communis ashfordi.....	.08	.07	
Arborvitae, American Dark Green.....	.08	.08	
Taxus media hickel.....	.09	.08	
Eucunymus patens.....	.07	.06	
Eucunymus alatus compactus.....	.07	.06	
Buxus sempervirens.....	.07	.06	
Taxus cuspidata.....	.10	.08	
Taxus media andersoni.....	.12	.10	
Taxus media browni.....	.12	.10	
Taxus media hatfieldi.....	.12	.10	
Taxus media No. 8, spreading.....	.12	.10	

2 per cent discount and free packing for cash with order.

MIAMI NURSERY CO.

Tipp City, Ohio

Member of American Association of Nurserymen and Ohio Nurserymen's Association.

LINING-OUT STOCK.

POTTED EVERGREENS.

	Per 100
Variety and height	
Juniperus depressa plumosa, 6 to 8 ins.....	\$17.50
Juniperus excelsa stricta, 6 to 8 ins.....	17.50
Juniperus hetzi, 6 to 8 ins.....	20.00
Juniperus hibernica, 6 to 8 ins.....	17.50
Juniperus pfitzeriana, 8 to 10 ins.....	30.00
Juniperus sabina, 6 to 8 ins.....	17.50
Taxus cuspidata, 6 to 8 ins.....	22.50
Taxus hickel, 6 to 8 ins.....	25.00
Thuja pyramidalis, 8 to 10 ins.....	22.50
Retinospora plumosa aurea, 10 to 12 ins.....	22.50

Packing without cost when cash accompanies order.

The HOLLANDIA GARDENS, Inc.

South Vienna, O.

	Each
Arborvitae, Globe, 18 to 24 ins.....	\$2.00
Arborvitae, Globe, 2 to 2 1/2 ft.....	2.25
Arborvitae, Siberian, 18 to 24 ins.....	2.00
Arborvitae, Siberian, 2 to 2 1/2 ft.....	2.25
Blota aurea nana, 18 to 24 ins.....	2.25
Blota aurea nana, 2 to 2 1/2 ft.....	2.50

Prices apply on lots of 25 or more of a size and variety. F.O.B. Clyde. Sheared and of highest quality. We invite your inspection.

The CLYDE NURSERY Clyde, Ohio

TAXUS, CAPITATA AND CUSPIDATA.

	Per 100
Strong rooted cuttings, 6 to 8 ins.....	\$ 8.00
2-yr. plants from 2 1/2-in. pots.....	25.00

Cash with order, please.

SINGER GARDENS Stamping Ground, Ky.

UNROOTED CUTTINGS OF PFITZER JUNIPER, 6 to 10 ins. long, not trimmed.

Now packed, express only, \$10.00 per 1000. Cash with order.

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4221 Grand Ave. Fort Smith, Ark.

LINERS, SPRING DELIVERY.

	Each
Viburnum burkwoodi, 4 to 6 ins.....	\$0.12
Viburnum burkwoodi, 6 to 8 ins.....	.17
Viburnum burkwoodi, 8 to 10 ins.....	.21
Daphne cneorum.....	.32
Daphne odora.....	.15
Juniperus tamaricifolia, 2 to 4 ins.....	.10
Juniperus tamaricifolia, 4 to 6 ins.....	.15
Juniperus tamaricifolia, 6 to 8 ins.....	.18
Liriodendron (Heavenly Blue).....	.15

Terms: Half of amount with order, balance C.O.D.; packing at cost, shipped express.

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Rt. 3, Box 3529 Edmonds, Wash.

All plants are extra-heavy and ready for the field.

Per 100

	Per 100
Taxus capitata, 12 to 15 ins., 4-yr., TT.....	\$60.00
Taxus capitata, 10 to 12 ins., 3-yr., TT.....	45.00
Taxus cuspidata, 12 to 15 ins., 4-yr., TT.....	50.00
Taxus cuspidata, 10 to 12 ins., 3-yr., TT.....	40.00
Taxus hickel, 8 to 10 ins., 2-yr., T.....	35.00

STROHL'S NURSERY

1404 N. Anthony Blvd. Forty Wayne, Ind.

LINING-OUT STOCK.

	Per 100	Per 1000
1-yr. bedded.....		
Taxus hickel.....	\$15.00	\$125.00
Taxus cuspidata.....	15.00	125.00
Taxus hatfieldi.....	17.50	150.00
Taxus brevifolia.....	20.00	200.00
Taxus canadensis, 2-yr. tr., 4 to 6 ins.....	7.00	60.00
3-yr. tr., 6 to 9 ins.....	11.00	100.00
4-yr. tr., 9 to 12 ins.....	16.00	160.00

For complete list of liners on request.

VERKADE'S NURSERIES Wayne, N. J.

TAXUS CAPITATA that is in a formal garden on a private estate in N. Jersey. Perfect in shape, 2 ft. high. Approximately 960 feet. No reasonable offer refused. Plants may be seen any time convenient to buyer.

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6 Smart Ave. Yonkers, N. Y.

Our complete list of lining-out stock covering both broad-leaved and coniferous evergreens, shrubs, etc., is now ready for mailing upon receipt of your request.

T. G. OWEN & SON, Inc. Columbus, Miss.

NANDINA SEEDLINGS.

Ready to pot, \$20.00 per 1000, postpaid.

DUNLAP NURSERIES Knoxville 16, Tenn.

FRUIT TREES

NURSERY STOCK.

Japanese Persimmon, Tani-nashi, Eureka, Hyakume.

Each

5 to 6 ft., heavy caliper.....\$1.00

4 to 5 ft., heavy caliper......75

3 to 4 ft., heavy caliper......75

Hyakume and Eureka only, 6 to 7 ft., heavy.....1.25

Thomas Black Walnut.....1.40

5 to 6 ft., heavy caliper.....1.20

4 to 5 ft., heavy caliper.....1.00

3 to 4 ft., heavy caliper.....1.00

Apples Jonathan, Red Delicious, Red Rome Beauty King David......50

5 to 7 ft., br., 3/4-in. cal. and up......50

5 to 6 ft., br., 3/4-in. cal. and up......40

Pears, Kieffer, Le Conte, Bartlett......60

5 to 6 ft., heavy br......50

4 to 5 ft., heavy br......50

Flowering Crab Apple, Eleyi, Lemone.....1.25

6 to 7 ft., br., 3/4-in. cal. and up.....1.00

5 to 6 ft., br., 3/4-in. cal. and up.....1.00

4 to 5 ft., br., 3/4-in. cal. and up......85

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Athens, Texas

LOOK!

SURPLUS 2-YR. APPLE.

Graded to A. A. N. Standards.

Twelve leading varieties.

Now booking for Fall or Spring deliveries at these attractive low prices:

Each

7/16-in. cal., 3 to 4 ft.....\$0.15

9/16-in. cal., 4 to 6 ft......20

11/16-in. cal., 6 to 8 ft......25

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PACK TRUE-TO-NAME NURSERY CO.

Phone 82-Y McMinnville, Tenn.

Peach, Plum, Apricot, Fig, Persimmon, Pecan, in fact anything you might need.

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Stephenville, Texas

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Bring Results.

GROUND COVERS

VINCA MINOR (myrtle or periwinkle)—None less than 3 years old, with good roots, 15 to 30 canes to clump, individually made up, fresh-dug, \$37.50 per 1000. Prompt shipment. Quantity order priced. 2 per cent cash discount. Also Pachyandra.

H. C. WAUGH

737 Greene St. Marietta, Ohio

WHO WANTS THESE CASH BARGAINS?

	Each
300 Pyramidal Arborvitae, 3 to 4 ft.....	\$3.00
400 Pyramidal Arborvitae, 4 to 5 ft.....	3.50
275 Pyramidal Arborvitae, 5 to 6 ft.....	3.75
200 Globe Arborvitae, 18 ins.....	2.00
150 Irish Juniper, 2 to 2 1/2 ft.....	2.50
100 Irish Juniper, 4 to 5 ft.....	2.50
125 Gold Thread Cypress, 1 1/2 to 2 ft.....	2.50
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All first-class, transplanted stock, B&B, F.O.B. nursery.	
Hundreds of Pfitzer, Polish and Andorra Junipers, Siberian Arborvitae, Pines and Spruces.	

Let us quote you on your needs.

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ADVANCED LINERS in Azalea, Cornus, Cotoneaster, Ilex, Juniperus, Kalmia, Leucothoe, Pieris, Rhododendron, Taxus, Thuja, Tsuga, Viburnum.

Finished Trees in Colorado Blue Spruce.

All Certified for Western Shipment.

Write for Wholesale Price List.

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NATIVE WILD FLOWERING PLANTS.

Rhododendron, Azalea, Kalmia, Leucothoe and Tsuga canadensis. Evergreens, perennials, shrubs, trees, orchids, ferns and vines.

Send for wholesale price list.

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Marshall, N. C.

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Strong, rooted cuttings, \$4.00 per 100;
\$38.00 per 1000. Beetle Zone only.
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6 Smart Ave. Yonkers, N. Y.

PACHYSANDRA TERMINALIS.
Strong, 1-yr., field-grown, \$65.00 per 1000.
HILLCREST GREENHOUSES, Franklin, Pa.

HARDWOOD CUTTINGS

HARDWOOD CUTTINGS.
From Hardy Northern-grown Shrubs and
Trees. Delivery after December 1. From our
own plantings and blocks checked yearly for
accuracy. Cut 7 inches.

	Per 1000	Per 1000
<i>Aronia melanocarpa</i>	4.00	
<i>Cornus paniculata</i>	4.00	
<i>sibirica</i>	4.00	
<i>lutea</i> (yellow bark)	6.00	
<i>amomum</i>	4.00	
<i>Foraythia intermedia</i>	5.00	
<i>primulina</i>	4.00	
<i>spectabilis</i>	3.00	
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Cutleaf	4.00	
Red-berried	4.00	
canadensis	3.00	
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Ibota	3.00	
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bella rosea	3.00	
tat. rosea	4.00	
korolkowi	4.00	
zabeli	5.00	
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froebeli	3.00	
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Snowberry, White	3.00	
Lilac, rothomagensis	5.00	
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Willow, Niohe	3.00	
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Pussy	3.00	
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Packed free. Cash with order, please. De-		
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Scotch Grove, Iowa

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WELLER'S FAMOUS PHLOX.
(Paniculata.)
With That Wonderful Root System.
TEN HIGHLIGHTS
out of the 76 varieties we grow.
Strong, No. 1. With all roots.
Per 10 Per 100

Bluette, large blue and rose,		
magic color	\$2.50	\$20.00
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blood-red eye	2.00	15.00
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scarlet sheen	3.25	17.50
Pinkette, beautiful tint, like soft-		
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fuchsia eye	3.00	25.00
Purple Sweetheart, reddish-		
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Rynstrom (Improved), large, dee-		
bright pink, from imported		
stock. Discard your old and		
plant new	2.00	15.00
San Antonio, dark blood-red,		
excellent	2.25	17.50
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Order now for fall planting or propagation.		
Ask for our catalog for other varieties.		
3 per cent for cash with order, or established		
credit.		

WELLER NURSERIES CO., Inc.
Holland, Mich.

	Each	Per 100 Per 1000
<i>Dicentra spectabilis</i>		
3 to 5-eye	\$28.00	\$0.25
<i>Dicentra spectabilis</i>		
5 to 8-eye	38.00	.35
<i>Dicentra spectabilis</i>		
undivided clumps	48.00	.45

BACHMAN'S, INC.
6010 Lyndale Ave., So. Minneapolis, Minn.

<i>Dicentra spectabilis</i> , 3 to 5-eye	Per 100
<i>Dicentra spectabilis</i> , 5 to 8-eye and up	\$25.00
<i>Dicentra eximia</i> , 3 to 5-eye	15.00
<i>Dicentra eximia</i> , 5 to 8-eye and up	20.00

J. HENDRIKS, Grower Portage, Mich.

HARDY CHRYSANTHEMUMS—Ann. Autumn Song, Alpink, Alabaster, Allen Felton, Bridesmaid, Betty, Coral Sea, Challenger, Courageous, Cerise, Caliph, Dahlia-mum, Ember, Daydream, Egypt, Early Wonder, Avalanche, Nancy, Crimson Buttercup, Empire State, Ethel, Bonfire, Border White, Burgundy, Glacier, Lavender Lassie, Heatherbloom, Inspiration, Erma Linda, Mt. Rainier, Forward, Fortune, Maiden Blush, Geronimo, My Lady, Murillo, Jean Harlow, Harbinger, Lady Electra, Little Eskimo, Minong, Major, Omaha, Olive Longland, Red Velvet, Sonny Boy, The Chief, Sunapee, Polar Ice, Quaker Maid, Red Hussar, Rose Mandell, Ronnie, Santa Claus, Summer Sunset, The Shick, Trigo, Tampico, Wm. Longland, Terry, Charm, Magenta, Yellow, White, Rose, Orchid Spoona. Field plants, 10 for \$1.00.

HARDY PHLOX—Bridesmaid, Colonial, Prime Minister, Eva Forrester, Gen. Petain, Rose, L'Esperance, 10 for \$1.00. Surplus stock, 400 varieties Iris, 5c each.
HILLVIEW GARDENS, Fort Madison, Iowa

BLEEDING HEARTS.
For Fall delivery.

	Per 13	Per 100	Each
<i>DICENTRA SPECTABILIS</i>			
Mail-order size, 3 to 5-eye	\$28.00	\$0.25	
Garden size, large	\$4.50	35.00	.30
3 to 5-eye	6.00	40.00	.35
Forcing size, 5 to 8-eye			
Mammoth plants, 8-eye	7.00	50.00	.45
and up			
<i>DICENTRA EXIMIA</i>	2.00	15.00	.10
3 to 5-eye	3.00	20.00	.15
5 to 8-eye			

We have specialized in growing Bleeding Hearts for many years. Because of our experience and cooperation with the Soil Conservation Service we believe our plants to be the best obtainable. Long, clean-rooted plants, the highest quality in every respect.
THE CZ NURSERIES, Inc.
Dock Rd. Madison, Ohio

PHLOX SUBULATA (Moss Phlox).
Large, healthy, undivided field-grown clumps. Per 10 Per 100

Alba, pure white	\$1.50	\$12.00
Atropurpurea, wine-red	1.50	12.00
Blue Hill, soft, pale blue	1.50	12.00
C. F. Wilson, the best blue	1.50	12.00
Fairy, rich lavender	1.50	14.00
Lilacina, lilac-blue	1.50	12.00
Moerheim, deep salmon-pink	1.50	14.00
Rosea, bright rose	1.50	12.00
Vivid, vivid pink with darker eye	1.75	15.00
Amoenae, clear pink, 6 in. tall	1.50	12.00

Terms: Cash with order, or 25 per cent, balance C.O.D.
WALTERS GARDENS
Rt. 2 Zeeland, Mich.

Note: Formerly Knoll & Walters Perennial Farm. No change in management, just change of firm name.
Hardy Plants July-sown, 3 to 4 ins. tall.
Per 000

<i>Alyssum saxatile compactum</i> , Gold-dust	\$11.50
<i>Bellis perennis</i> , double	4.00
<i>Coreopsis Dougl.</i> , Sunburst	11.00
<i>Carnation Grenadin</i> , mixed	11.00
<i>Dianthus deltoides erectus</i> , red	12.00
<i>Dianthus plumarius semperflorens</i> ,	
double, mixed	12.00
<i>Digitalis Giant Shirley</i>	10.00
Forget-me-not	5.00
<i>Viola cornuta</i> , mixed	6.00
Pansies, Swiss Giant and Dwarf Swiss	
Giant mixed, and Donovan's Strain	5.50
Half-grown transplants of the above	15.00

Pansies in bloom.
PALACE GARDENS
P. O. Box 561 Kalamazoo, Mich.

SHASTA DAISIES.
Strong, field divisions. Per 100

Majestic, best large single	\$15.00
Mount Shasta, tall, double	12.00

HARDY IVIES.
Strong, clean stock. Per 100

English, 3-in. pots	\$18.00
Baltic, 2 1/2-in. pots	15.00
Also <i>Eunonymus coloratus</i> , 2 1/2-in.	12.00

DELPHINIUMS.
Strong, 2-yr. clumps. Per 100

Pacific Hybrids, mixed colors	\$18.00
Belladonna Improved, light blue	15.00
Field seedlings	Per 1000
Pacific Hybrids, mixed colors	\$35.00
Belladonna Improved	15.00

STRATFORD GARDENS Delaware, Ohio

DELPHINIUMS.
Strong, 1-yr., field-grown transplants. Per 10 Per 100

<i>Belladonna</i> , Cliveden Beauty,		
light blue	\$1.25	\$10.00
<i>Belladonna</i> (Imp.), dark blue	1.25	10.00
<i>Blackmore</i> & <i>Langdon</i> hybrids	1.50	12.00
<i>Gold Medal</i> hybrids	1.25	10.00
<i>Lamartine</i> , dark blue	1.25	10.00
<i>Galahad</i> , Pacific hybrids, white	1.75	15.00
<i>Pacific</i> hybrids, mixed	1.50	13.00
<i>Wrexham</i> or <i>Hollyhock</i> strain,		
light and dark shades	1.50	12.00

Cash, please, or C.O.D. orders.
HENRY LE POIRE, Rt. 2, Zeeland, Mich.

PHLOX.
Be sure you have our new list of Hardy Phlox and other perennials before you place an order for your plants this fall. Write for list. Shipping now.
HENRY LE POIRE, Rt. 2, Zeeland, Mich.

HARDY MUMS—Field Clumps.

1 each of 20 varieties, \$5.00
1 each of 50 varieties, \$10.00
Or will exchange for Peonies, Glads, Dahlias,
Hardy Phlox, or what have you?
BROADLANDS NURSERY & ORCHARDS
R. R. 7, Box 448 Terre Haute, Ind.

HARDY CHRYSANTHEMUM CUTTINGS.
It is time to think of Hardy Chrysanthemum cuttings for spring delivery. A complete list of the best varieties is now available. Request a copy on your business stationery, please.

FRED C. GLOECKNER & CO., Inc.
15 East 26th St. New York 10, N. Y.

PERENNIALS.

New and Standard Kinds.
A most modern and complete selection.
New Wholesale List now ready.
Send for your Free Copy Now.
CARROLL GARDENS
Box 16 Westminster, Md.

AQUILEGIA (Columbine).
Strong, 1-yr. field-grown transplants. Per 10 Per 100

Mrs. Scott Elliott, pastel shades,
1 and 2-yr. \$1.25 \$10.00
Cash, please, or C.O.D. orders.
HENRY LE POIRE, Rt. 2, Zeeland, Mich.
See the October 1 issue of the American Nurseryman for list of Hardy Plants.
RICHARDS GARDENS
"Old Homestead Brand"
Box 18 Plainwell, Mich.

HARDY PLANTS.
Please write for our new list of perennial plants.

WALTERS GARDENS
Rt. 2 Zeeland, Mich.
See the October 1 issue of the American Nurseryman for list of Delphiniums.

RICHARDS GARDENS
"Old Homestead Brand"
Box 30 Plainwell, Mich.

HARDY PHLOX.
Please ask for our new list on 1-year, field-grown Phlox.

WALTERS GARDENS
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America's Best Source
for Hardy Plants is
THE WAYSIDE GARDENS
Mentor, Ohio
Write for Trade List.

Pansies, perennials and rock plants in wide variety. Send for catalog.
FITZKONKA'S FANSY FARM
Bristol, Pa.

MINTS—\$4.00 per 100.
WARREN SHINN'S NURSERY
Woodbury, N. J.

HOLLY

ILEX OPACA.
Rooted cuttings from the propagating sand, original leaves, only \$15.00 per 100, plus packing and beetle treatment if necessary.
Large specimen Hollies, platformed, to 16 ft.
Trade list and free booklets.

EARLE DILATASH, Holly Specialist
(On Rt. 25) Robbinsville, N. J.

ILEX DECIDUA.
Bears masses of red berries that hang all winter. Hardy, transplants well, good retail seller. 1-yr. seedlings, 6 to 12 ins., 15c; 4 to 6 ins., 10c.

Red Yucca (*Hesperaloe parviflora*), blooms all summer. 1-yr. seedlings, 10c. Fall or Spring.
NOBLE NURSERY Noble, Okla.

ENGLISH HOLLY.
Well berried sprays, hormone-treated. Packed in 10-lb. cartons, 50c per lb.; 45c per lb. in 100-lb. orders or over.
Prices F.O.B. Portland, Ore.
Cash with order, please.

STANGEL'S HOLLY
Sherwood, Ore.

ENGLISH HOLLY.
Top-grade, glossy English Holly, heavily berried; no wood, 55c per lb.; 100-lb. lots, 50c per lb. State shipping date. Cash, please.
OREGON GARDENS
799 N. E. Columbia Blvd. Portland 11, Ore.

PEONIES

RED PEONIES.
Pay most profits, 50 per cent of the demand is for red varieties. They bring largest retail prices. Here are three best reds: Karl Rosenfield, crimson; Mona, Martin Chazaux, darkest red; Longfellow, bright red. Divisions: \$5.00 per 10; \$40.00 per 100; \$350.00 per 1000. Cash with your order, please.
PAYNE DAHLIA FARMS
Route 5 Kansas City 3, Kansas

Peonies, all color mixture consisting of Duchesse De Nemours, Avalanche, Felix Crousse, Walter Faxon, Sarah Bernhardt, Susan Anthony, Mary Brand, Mikado Barr. 2 to 5-eye div., \$17.50 per 100. Sempervivum tectorum (Hen and chickens), \$4.50 per 100. Hardy fern, \$5.00 per 100. **THE PEQUOT NURSERIES**, Brainerd, Minn.

PEONIES.

Good strong divisions from 3-yr.-old plants, \$30.00 per 100. Varieties: Karl Rosenfeld, Felix Crouse, red; Festiva Maxima, white; Edulie Superba, pink. Assorted colors, unnamed, \$25.00 per 100.

YUCCA FILAMENTOSA, \$10.00 per 100.

GILBERTSON APRIARIES
Kindred, N. Dak.

PFONIES—De Verneville, white; Felix Crouse, red; Edulie Superba, pink. 3 to 5-eye divisions, \$30.00 per 100; mixed colors, \$25.00 per 100. 25 of any at 100 rate. Cash with order, express collect.

ANDREWS' NURSERY

Box 442 Chapel Hill, N. C.

ROSEBUSHES

ROSEBUSHES.

THE BEST OUT OF TEXAS

AND THAT IS NOT JUST BRAGGING.
We do not spare any expense in the production of our roses, and as a consequence ours are just a little better. Below is a partial list of our most popular varieties:

TWO-TONE PINK	
Tallman	Editor McFarland
Pres. H. Hoover	Briarcliff
E. N. Perkins	Columbia
Condessa de Santiago	Pink Radiance
RED	
Red Tallman	Shell-Pink Radiance
Better Times	Betty Uprichard
Red Radiance	Paul Neyron
Etoile de Hollande	The Doctor
Syracuse	Picture
Pouge Mallerin	Contrast
YELLOW	
Pinetella	Yellow Tallman
Christopher Stone	Golden Charm
Grenoble	Golden Dawn
Ami Quinard	Golden Opheila
E. G. Hill	Mrs. P. S. du Pont
Francis Scott Key	Sœur Therese
Red Briarcliff	Luxembourg
Mary Hart	Roslyn
WHITE	
White American	Lady Hillingdon
Beauty	Betty Grace Clark
Caledonia	Joanna Hill
K. A. Viktoria	Yellow Condessa
Konigin Luise	Golden Santiago
F. K. Druschki	POLYANTHA
Snow Queen	Cecile Brunner
CLIMBERS	
Blaze	Golden Salmon
Cecile Brunner	Kirsten Poulsen
Tallman	Elise Poulsen
Paul's Scarlet	Red Lafayette
Caledonia	Mrs. R. M. Finch
Red Radiance	Floradora
Mrs. P. S. du Pont	Baby Chateau
Pink Radiance	
K. A. Viktoria	
Red American Beauty	
Mary Hart	

Priced per 100.

	In lots of 100	In lots of 1000
XXX, Jumbo	\$37.50	\$35.00
No. 1	30.00	27.50
No. 1 1/2	25.00	22.50

A 25 per cent deposit will hold your order. Balance C.O.D. Sold only in multiples of 10 of a grade and variety.

We pack in bundles of 10 of any certain grade and variety. If you desire less than this number of any one variety and grade, add 5c per bush to quoted price.

Root-wrapped and paraffin-dipped with a picture tag, at 10c per bush additional cost.

MARTIN'S ROSE NURSERY

Rt. 1, Box 155 Arp, Tex.

WHY BE SATISFIED WITH LESS THAN THE BEST? CO-OPERATIVE ROSE GROWERS is composed of some fifty nurserymen who take great pride in producing the best in 2-yr. rosebushes. Co-Op rosebushes are dug and stored in cold-storage rooms, still another added expense, but assuring you, as always, the best quality roses at reasonable prices. Why run the risk of using roses that have been subjected to freezing temperatures?

Complete price list of bare-root and packaged roses available to licensed nurserymen, florists and dealers only. Write today.

CO-OPERATIVE ROSE GROWERS

Wholesale Exclusively

Phone 2-0122

P. O. Box 808 Tyler, Tex.

ROSEBUSHES.

THE BEST THINGS IN LIFE

ARE NOT FREE

(Notwithstanding the words of a popular song)
But they can seem almost free when you consider the quality. Service and all-around satisfaction.

NEW LONDON ROSES.

For variety and price list, consult any Sept. issue of this magazine.

DO NOT DELAY. ORDER TODAY.

NEW LONDON ROSES

P. O. Box 876 Overton, Tex.

ROSEBUSHES—2-yr. plants, grown right, graded right, packed right. Very complete assortment of varieties. Ask for price list and book your requirements now.

ROSEMONT NURSERIES

D. L. Thompson, Mgr. Tyler, Tex.

ROSES.

Arp-grown with life insurance. Write for trade list while variety assortment is still good. Texas state pecan trees, black and English walnuts, fig and persimmon. Licensed contract production of All-America roses.

Box 867-C ARP NURSERY CO. Tyler, Tex.

ROSES.

Polyanthae (per plus).
PETER J. BOOY ROSE NURSERY
San Jacinto, Calif.

Please see our display ad.
OZARKS PLANT FARMS, Inc.
Springfield, Mo.

SEEDS

SEEDS.

	Per lb.
Viburnum lentago, clean.....	\$2.00
Cornus paniculata, clean.....	1.85
Corylus americana (Hazelnut).....	.70
Box Elder.....	.35
Bittersweet (C. scandens), clean.....	3.50
Crataegus mollis, clean.....	2.00
Rosa blanda, clean.....	2.35
Lonicera morrowi, clean.....	4.25
Rhubarb.....	1.25

Write for complete list.

BILL SMITH, Seedman

404 Blunt St. Charles City, Iowa

FRESH SEEDS. 1950 Crop.	Per lb.
Pinus palustris, longleaf pine.....	\$2.00
Pinus caribaea, slash pine.....	5.00
Cornus florida, white dogwood.....	.75
Magnolia glauca, sweet bay.....	4.00
Magnolia grandiflora, white magnolia.....	4.00
Virginia, Live Oak.....	1.00
Chinese Chestnut.....	1.25
Chinquapin, tree type.....	1.25
Japanese Walnuts.....	.60

STOVALL NURSERY Leakeville, Miss.

CHINESE CHESTNUT SEED NUTS.

10 to 50 lbs., 65c per lb., F.O.B.

EDIBLE CHESTNUTS

10 to 50 lbs., 35c per lb., F.O.B.

WHITFORD NURSERY

Farina, Ill.

OSAGE ORANGE SEEDS.

(Maclura aurantiaca or pomifera, Bois d'Arc.)
Clean, new-crop seeds. Available after Dec. 1.

RAY WICKLIFFE

Seneca, Kan.

Oregon-grown New Crop

Hardy Polyantha Primrose Seeds.

Newer colors, large florets.

Trade pkg., \$1.00; 7 pkgs., \$5.00.

PRIMROSE ACRES

Gladstone 4, Ore.

SEEDS.

Juniperus virginiana (Red Cedar) seeds.
From inspected disease-free area.
Let us quote on your needs.

HOME NURSERY, Cuba, Kan.

NORTHERN EVERGREEN SEEDS—Save money here on small orders, 2 ozs. or more sold at the lb. rate. List on request, K. J. BRADEN, Box 187, Milton, N. H.

SHRUBS AND TREES

LINING-OUT STOCK.

Strong, field-grown plants.

	Per 100	Per 1000
Honeysuckle, heckrotti.....	\$12.00	....
Euonymus patens, true-berried type, 10 to 12 ins.....	15.00	....
Euonymus coloratus, 10 to 12 ins.....	12.00	\$100.00
Euonymus radicans, 10 to 12 ins.....	12.00	100.00
Euonymus carrierei, large-leaved type, 10 to 12 ins.....	12.00	100.00
Lombardy Poplar (whips), 6 to 12 ins.....	2.00	18.00
Lombardy Poplar (whips), 12 to 18 ins.....	2.50	22.50
Lombardy Poplar (whips), 18 to 24 ins.....	3.00	25.00

ROOTED CUTTINGS.

Viburnum opulus sterile, Common Snowball.....	10.00	80.00
Euonymus coloratus.....	10.00	80.00
Euonymus patens, true-berried type.....	12.00	....
Spiraea froebeli.....	3.50	30.00
Spiraea Anthony Waterer.....	4.00	35.00

Cash, please. No packing charges.

R. 4 PRITCHARD NURSERIES

Ottawa, Kan.

Mahaleb Seedlings.	Per 1000
No. 1, 3/16-in. cal. and up.....	\$15.00
No. 2, 2/16-in. to 3/16-in. cal.....	11.00
No. 3, about 2/16-in. cal.....	8.00
Russian Mulberry, 3 to 4 ft.....	30.00
Russian Mulberry, 2 to 3 ft.....	21.00
Russian Mulberry, 18 to 24 ins.....	15.00
Russian Mulberry, 12 to 18 ins.....	9.50

Native Plum.....

No. 1, 3/16-in. cal. and up..... 20.00

No. 2, 2/16-in. cal. and up..... 10.00

Chinese Elm, 1-yr., grown from Washington seed. Good calliper, 8 to 12 ins..... 8.40

18 to 24 ins..... 12.00

6 to 12 ins..... 4.50

ROGERS WHOLESALE NURSERIES

Box 132 Winfield, Kan.

FRUIT TREES

Pears, Kieffer, whips	Each
18 to 24 ins.....	\$0.20
2 to 3 ft.....	.35
3 to 4 ft.....	.50

Peach, June Bud, 1-yr.

Elberta, Belle of Ga., Red Haven, J. H. Hale, Golden Jubilee, Dixigem, Sullivan, Ea. Elberta.

6 to 12 ins..... .07 1/2

12 to 18 ins..... .15

18 to 24 ins..... .20

2 to 3 ft..... .25

SHADE TREES.

Chinese Elm, fast grower

4 to 5 ft..... .40

6 to 6 ft..... .50

6 to 8 ft..... .75

Tulip (Poplar) Tree

4 to 5 ft..... .40

5 to 6 ft..... .50

6 to 8 ft..... .75

Order in multiples of 10 or 25.

5 per cent discount cash with order.

Send us your WANT LIST.

GLOBE NURSERIES

Box 249 McMinnville, Tenn.

FOR SALE

200 Norway Spruce, 2 to 3 ft..... \$1.50

200 Golden Cypress, 15 to 24 ins..... 1.00

900 Pyramidal Arborvitae, 2 to 3 ft..... 1.50

150 Canadian Hemlocks, 1 to 1 1/2 ft..... 1.00

200 Andorra Junipers, 12 to 15 ins..... 1.00

250 Black Hills Spruce, 15 to 24 ins..... 1.25

300 American Arborvitae, 2 to 3 ft..... 1.50

100 American Arborvitae, 3 to 4 ft..... 2.00

1000 Cushion Mums, 18-in. clips, B&B .40

400 Forsythia fortunei, 4 to 5 ft.....

heavy B&B clumps..... 1.00

100 Weigela rosea, 3 to 4 ft.....

B&B clumps..... 1.00

400 Spiraea vanhouttei, 2 to 3 ft, clips, bare-root..... .30

100 Chinese Elms, 4 to 7 ft, heavy..... 1.00

10,000 Andorra Junipers, 6 to 10 ft, T..... .12

5000 Hetzi glauca juniperus, 7 to 10 ft, T..... .15

All evergreens, except liners, are heavy, well sheared and balled and burlapped. Nice young, healthy stock.

WHERRY'S NURSERIES

St. Marys, W. Va.

Per 100 Per 1000

Ginkgo biloba, 2 to 4 ins..... \$2.00 \$25.00

Ginkgo biloba, 4 to 6 ins..... 4.00 35.00

Ginkgo biloba, 6 to 8 ins..... 5.00 45.00

Berberis thunbergii, Green-leaved Barberry, Transplants, each

2-yr. seedlings..... 10c

9 to 12 ins..... 10c

12 to 15 ins..... 12 1/2c

15 to 17 ins..... 15c

Berberis thunbergii atro., Red-leaved Barberry, Transplants, each

2-yr. seedlings..... 10c

9 to 12 ins..... 10c

12 to 15 ins..... 12 1/2c

15 to 18 ins..... 20c

Inspection cert. No. 75. Cash with order, packing extra.

EDMOND L. BABCOCK NURSERY

32 West Ave. Danville, N. Y.

ORNAMENTAL SHRUBS.

Per 100 Per 1000

Buddelia, Dubonnet, No. 1..... \$25.00 \$200.00

White Cloud, No. 1..... 25.00 200.00

Kolkwitzia amabilis, 2 to 3 ft..... 45.00 400.00

Philadelphus virginialis, 2 to 3 ft..... 40.00 300.00

3 to 4 ft..... 50.00 400.00

Privet, Ibolium, 3 to 4 ft..... 15.00 125.00

Rhus cotinus (Smoke Tree), 18 to 24 ins..... 30.00 250.00

Salix caprea (Fr. Pussy Willow), 2 to 3 ft..... 30.00 250.00

Spiraea Anthony Waterer, 18 to 18 ins..... 35.00 300.00

18 to 24 ins..... 40.00 350.00

Spiraea vanhouttei, 4 to 5 ft..... 40.00 350.00

Send for complete trade list of small fruits, ornamentals and lining-out stock.

W. N. SCARFF'S SONS

New Carlisle, Ohio

MIMOSA.

Albizia julibrissin.

Now booking orders for future delivery at rock-bottom prices for clean, well grown, healthy stock of this popular, most beautiful, small, pink-flowering tree. Easy to transplant. Grows quickly.

Per 100 Per 1000

6 to 10 ins..... \$ 2.50 \$ 20.00

12 to 18 ins..... 4.00 30.00

24 to 30 ins..... 5.00 35.00

36 to 40 ins..... 10.00 70.00

50 at 100 rate. 500 at 1000 rate.

3 to 4 ft. transplants..... 17.00 100.00

4 to 5-ft. transplants..... 30.00 225.00

6 to 7-ft. transplants..... 65.00

7 to 8-ft. transplants..... 90.00

Not less than 10 at 100 rate.

RIEDEL PLANT CO.

Experiment, Ga.

SPECIAL OFFER FOR FALL DELIVERY.

LILACS.

Two-year grafts, \$30.00 per 100, \$250.00 per 1000 in the following varieties:

100 Lucy Balliet 100 Madame Lemoine

300 Belle de Nancy 500 Souvenir de Lud-

wig Spaeth

200 Madame Felix

200 Marechal Foch

C. HOOGENDORN

Turner Road Newport, Rhode Island

SHRUBS AND TREES—Continued

Two New Cydonias with a Great Future.
KNAPHILL SCARLET: this variety has magnificent large vermillion-red flowers. This is the old favorite in England. Plants on their own roots, 15 to 30 inches, \$20.00 per 12; \$150.00 per 100; 50 at 100 rate.

ROWALLANE SEEDLING: It's large, beautiful, crimson Camellia-shaped flowers are nearly 3 inches across. This is an outstanding variety. Plants on their own roots, 15 to 24 inches \$20.00 per 12; \$150.00 per 100; 50 at 100 rate.

Both varieties are very free-flowering, quite hardy, strong growers, quite distinct from the other varieties and very useful as wall covers and also as specimens. Terms: 30 days net. Free packing for cash with order.

KLUIS' NURSERIES
Pompton Plains, N. J.

MIMOSA (Silktree).
Albizia Julibrissin.

	Per 100	Per 1000
6 to 12 ins.	\$ 3.50	\$ 28.00
12 to 24 ins.	8.00	70.00
2 to 3 ft.	18.00	160.00
3 to 4 ft.	25.00	230.00
4 to 5 ft., 2-yr.	35.00	330.00
5 to 6 ft., 2-yr.	55.00	500.00
6 to 7 ft., 2-yr.	75.00	

300 at the 1000 rate.

These trees are grown from the best deep pink flowering trees that we know of in Oklahoma. In this way we strive for permanent satisfaction. This should mean a lot to you and your customers.

Liberal Grading—No Packing Charge.

WARREN & SON'S NURSERY
Rt. 4, Box 135-C Oklahoma City, Okla.

LINERS AND TRANSPLANTS.

	Per 100	Per 1000
Berberis thun. atropurpurea, red-leaved Japanese Barberry, 10 to 12 ins.	\$ 7.00	\$65.00
3-yr., bushy 18 to 24 ins. XX	45.00	
Cypress lawsoniana, 1-yr. adigs., 4 to 8 ins.	5.00	40.00
2-yr. adigs., 8 to 12 ins.	9.00	80.00
Cedrus deodara, adigs., 6 to 8 ins.	10.00	80.00
Cotoneaster bullata, adigs., 1 1/2 to 2 1/2 ft.	7.00	60.00
250 or over at 1000 rate, packing additional, at cost. F.O.B. Seattle.		

HALMO NURSERIES
4700 25th St., N.E. Seattle 5, Wash.

Ohio's oldest nursery offers you red and green Barberry, Crowned night. Graded right. Berberis thunbergii atropurpurea (Red-leaved Barberry).

	Per 10	Per 100
12 to 15 ins., 3-yr., Tr.	\$2.00	\$17.50
18 to 24 ins., 3-yr., Tr.	3.50	30.00
24 to 30 ins., 3-yr., Tr.	4.00	35.00

Berberis thunbergii atropurpurea (Green-leaved Barberry).

	Per 10	Per 100
12 to 15 ins., 3-yr., Tr.	\$2.00	\$15.00
18 to 24 ins., 3-yr., Tr.	3.00	25.00

Cash with order. Boxing free. Est. 1877

CALL'S NURSERIES
Call Road Perry, Ohio

NIOBE WEeping WILLOW.

Staked, well grown.

Sizes 5 to 6 ft., 6 to 8 ft., and 8 to 10 ft.

Prices reasonable.

Available late Fall or Spring.

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RED JAP. MAPLE SEEDLINGS.

Selected 100 per cent red, 3-yr., sturdy.

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10 to 12 ins. XXX. \$40.00 \$250.00

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Pot these seedlings this fall and you will have salable maples by spring.

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Delivery fall or spring.

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Swarthmore, Pennsylvania

EUROPEAN WHITE BIRCH SEEDLINGS.

We offer seedlings in groups from 2 ins. up to 24 ins. Write for prices, stating quantity wanted.

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Due to lack of space and time required for other interests we are offering our Chinese Chestnut adigs. at the following low prices: 1-yr. trees, 5 to 24 ins., \$5.00 per 100, \$30.00 per 500, \$45.00 per 1000. Prices F.O.B. Supply limited, satisfaction guaranteed.

No charge for packing.

Cash with order, please.

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Lombardy poplar, 6 to 8 ft., \$20.00 per 100; 4 to 5 ft., \$10.00 per 100; 2 to 3 ft., \$5.00 per 100. Carolina poplar, 8 to 10 ft., \$30.00 per 100; 6 to 8 ft., \$20.00 per 100. California and North Amer. Privet hedge, 2 to 3 ft., \$7.00 per 100; 18 to 24 ins., \$6.00 per 100.

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Rolla, Mo.

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100 or more at \$1.50 each.
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3000 12 to 18 ins., 75c each.

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10 to 15-in. field-grown transplants.

\$6.50 per 100, \$60.00 per 1000.

Grafting grade, \$8.50 per 100.

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Strong, well graded, 100 minimum order.

Per 100 Per 1000

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Per 100 Per 1000

Heavy 2-yr. No. 1 plants \$35.00 \$300.00

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4x4 ins. (cartons 1000 each)	3.00	3.30
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6x4 ins. (cartons 1000 each)	3.50	4.00

Priced per carton.

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5x 1/2 ins. (cartons 250 each)	2.00	2.25
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Propagation of Horticultural Plants, by G. W. Adriance and F. R. Brison. Covers methods of propagation, including bulbs, layerage, cuttage, budding and grafting. 314 p. (1939)..\$3.25

Handbook of Fertilizers, by A. F. Gustafson. Source, composition, effects and application of commercial fertilizers. 172 p., revised edition. (1944)\$2.00

Propagation of Plants, by M. G. Kains and L. M. McQueston. Reference book for propagators in nursery and greenhouse. 637 p., 375 illus., revised ed. (1942).....\$4.00

65 Practical Garden Plans, by John Elliott. For crowded areas in large cities, back yards, penthouses, outdoor living and dining rooms, etc. A wide range of plans applicable to many conditions. 48 p. Paper bound. (1950).....\$1.00

Azaleas: Kinds and Culture, by H. Harold Hume. Chapters include propagating, soils, planting, culture and care, feeding, pruning, azaleas as pot plants, greenhouse culture, insects and diseases. 63 black and white illus.; 9 in full color. 200 pages. (1948).....\$4.00

Diseases and Pests of Ornamental Plants, by Dr. Bernard Dodge and W. L. Rickett. Besides general chapters on diseases, insects and control measures, describes pests affecting some 600 species of plants in alphabetical order. 638 p. Illus. Revised edition (1948).....\$6.00

How to Beautify and Improve Your Home Ground, by Henry B. Aul. Provides plans, sketches, arrangements, terrace ideas, work and play centers, vegetable, flower, shrub and tree plantings. Modern ideas. 155 plans, drawings and illus. 320 p. (1949).....\$3.50

The Grafter's Handbook, by R. J. Garner. Information on almost every known method of grafting. Describes seedling and vegetative propagation of rootstocks, handling of scion wood, choice and use of tools. 24 p. of photographs. Many line drawings. 223 p. (1949).\$4.00

Shrubs and Vines for American Gardens, by Dr. Donald Wyman. Planting list guide for florists and nurserymen. Recommends about 1,100 species and varieties, with a secondary list of 1,700 for consideration. Gives some 800 blooming dates in sequence. Colored maps show hardiness zones of U. S. and Canada. 100 halftones. (1949)\$7.50

Manual of Cultivated Trees and Shrubs, by Alfred Rehder. Invaluable handbook, completely revised and enlarged. 1000 p. (1940).....\$12.00

Roses of the World in Color, by J. Horace McFarland. Guide to varieties, with cultural data. 296 p., 283 illus. in color. (1947).....\$5.00

Make Your Own Merry Christmas, by Anne Wertsner. Decorative ideas for using readily obtainable materials. 112 p., illus. (1946)..\$2.00

Maintenance of Shade and Ornamental Trees and Shrubs, by P. P. Pirone. Up-to-date, original and comprehensive—on pruning, surgery, pest control and other care. 436 p. (1948)..\$6.50

Plant Disease Handbook, by Cynthia Westcott. Accurate detection of diseases caused by bacteria, fungi, viruses, nematodes and nutrient deficiencies. Trees, shrubs, vines, flowers and vegetables included. 746 p. illus. (1950).....\$7.50

How to Increase Plants, by A. C. Hottes. Tells how to multiply plants by the most suitable method of propagation. Discusses seeds, cuttings, bulbs, grafting, fruit stocks, annuals, perennials, conifers, orchids, ferns, roses, trees and shrubs. (1949).....\$3.00

The Book of Shrubs, by Alfred C. Hottes. Tells how and when to plant, prune and spray and gives various lists of shrubs for many uses. Covers propagation, transplanting, pruning, soil requirements, etc. 438 p. Fourth edition. (1942)\$4.00

Planting Design, by Florence B. Robinson. Modern and practical treatment of theories of landscape composition. Chapters cover color theory, use of color, texture, mass grouping, planting about buildings and public plantings. 215 p. Illustrated by sketches. (1940).....\$3.00

Tree Experts' Manual, by Richard R. Fenska. Reference book on diagnosis of tree troubles, fertilizing, transplanting, pruning, surgery, diseases, insects, spray materials, etc.—handy information for daily operations of commercial tree expert. 192 p., 65 illus. (1943).....\$5.00

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Manual of Cultivated Plants, by L. H. Bailey. Revised edition, greatly expanded and up to date. Means of identification of fruits, grains, grasses, vegetables, greenhouse plants, ornamental shrubs, plants and garden flowers, with explanation of more than 1,000 botanical terms. 1,116 p. (1949).....\$17.50

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343 S. Dearborn St., Chicago 4

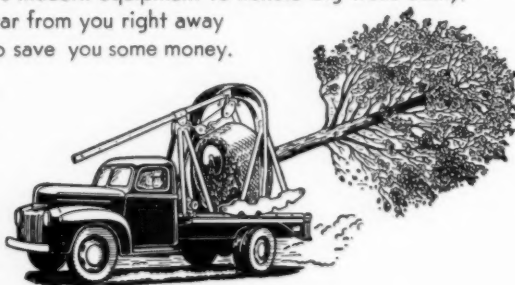
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So, if you need this modern equipment to handle big trees easily, we'll be glad to hear from you right away and do our best to save you some money.

- Fits any standard truck chassis.
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- Used by nurseries and park depts. all over U. S. "Rocker" Mover is patented.



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AMERICAN NURSERYMAN

CENTRAL PLAINS TURF FOUNDATION FORMED.

October 25 to 27, at Kansas State College, Manhattan, Kan., sixty-four persons from six states, representing various groups interested in better lawns and turf in the central plains region for golf courses, cemeteries, parks, school grounds, athletic fields, airports, industrial and private lawns, etc., gathered to form a permanent organization called the Central Plains Turf Foundation. The region represented involves Kansas, Nebraska, western Missouri and Iowa, eastern Colorado and Wyoming and northern Oklahoma.

At the first conference of the foundation, some of the best speakers in the plains region, as well as Dr. Fred V. Grau, of the U. S. G. A. greens section, Beltsville, Md., were called in to present topics vital to turf management. In addition to Dr. Grau, eleven faculty members of Kansas State College and seven speakers representing industry were on the program. Faculty speakers representing other schools in the region included Prof. Chester Billings and Dr. F. D. Keim, University of Nebraska, and Prof. H. L. Lantz, of Iowa State College.

A highlight of the program was a banquet and get-acquainted evening at the Wareham hotel, featuring Dr. Howard T. Hill, head of the speech department, Kansas State College. Greetings were extended at the opening session by Dean R. I. Throckmorton, college of agriculture, Kansas State College.

The newly formed turf foundation is a forward step toward more permanent horticultural practices in the region. Heretofore the region has had to rely upon research performed at a great distance from the area and generally under much different ecological conditions.

The objects of the Central Plains Turf Foundation are to promote research and to disseminate information for the promotion of better turf, flowers, shrubs and trees, and to cooperate with the United States Golf Association greens section and federal, state and other interested agencies working for the betterment of turf, flowers, shrubs and trees. The research of the foundation will be directly correlated with the co-operative work being done by the U. S. G. A. greens section at Beltsville. A memorandum of agreement was drawn up at the conference for a \$500 research encumbrance with Kansas State College for research projects to be started in 1951.

Organizations being invited into membership in the foundation include golf clubs, municipal parks, airports, cemeteries, industries, institutions, nurseries, landscape firms, garden clubs and individuals. The dates for the second annual turf conference of the foundation have been set for October 24 to 26, 1951, at Kansas State College.

Officers elected for the ensuing year are: President, Chester Mendenhall, Kansas City, Mo.; vice-president, W. E. Updegraff, Wichita, Kan.; secretary-treasurer, Dr. W. F. Pickett, Kansas State College. The executive committee consists of Chester Mendenhall, W. E. Updegraff and Ross McCausland, Wichita, Kan.

In addition, a board of directors was elected consisting of nine members, as follows: One-year term—Fred Wagner, McPherson, Kan.; Earl Bell, Kansas City, Mo.; W. E. Updegraff, Wichita, Kan. Two-year term—Max Weeks, Hutchinson, Kan.; Lynn Burris, Wellington, Kan.; L. E. Lambert, Dodson, Mo. Three-year term—Ross McCausland, Wichita, Kan.; Chester Mendenhall, Kansas City, Mo.; Dr. H. E. Meyers, Kansas State College, Manhattan.

George M. Fisher.

RODENT REPELLENTS.

Every season many nurserymen and orchardists discover that their stock has been severely damaged by meadow mice and by cottontail rabbits. In such areas rodenticides become compulsory items for autumn or winter application.

A cleanly cultivated nursery will attract few mice, but meadow mice will make runways in areas containing grass, weed cover or mulch and will do extensive damage to shrubs and trees. Some protection from mice may be given when the cover or mulch is removed several feet from shrubs and trees, but 100 per cent control is assured by using a poisoned bait to kill all of the mice within the area.

Early in the season the nurseryman should look for mice runways in the grass, weed or mulch cover and put poisoned bait directly in the runs every 100 square feet of cover. Zinc phosphide rodenticide is most effective when placed on half-inch apple cubes. One can of the rodenticide will cover twenty quarts or 2,000 apple cubes; there are approximately 100 cubes to one quart. Peeling or coring the apples is not essential. Just put one level teaspoonful of the poison over one quart of cubed apples placed in an

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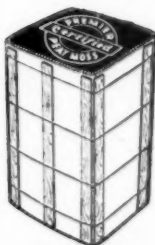
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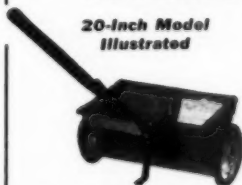
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Saves hours of digging time . . . costly labor

NOW! Plant heavier, wider trees and shrubbery with the EXTRA-WIDE, 18 to 24-in diameter ROPER Digger



Super High-speed Model, \$200 — includes attachments for tractor or jeep and any size auger (8 to 24 ins. in diameter.)
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This rugged, durable Roper Digger works perfectly in shale, stony clay, sandstone, any tough soil. Easily installed by one man in 5 minutes; fits any jeep or tractor. Cuts planting and transplanting time way down.

NO SWING OR SWAY . . . Stays rigid while digging . . . digs straight or at any angle, adjustable for hillside digging.

NO WOBBLING or breaking . . . Safety shear pin is at universal and is easily replaced in field. Three models to choose from that dig up to 42-in. holes; from 8 to 24 ins. in diameter.

Write for free information and name of nearest dealer. **FULL YEAR GUARANTEE** on all parts and workmanship . . .

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SPECIFICATIONS
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Specially Designed Curved Nose.
All-Steel Construction electrically welded.
Weight 46 pounds.
Over-all Length 63 inches.
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enameled pan, cover the pan and then shake it with a rolling motion until all of the cubes are evenly coated. Each piece of bait should be covered in the runway with grass or weeds and checked occasionally for signs of mice. This poison is not mailable, but can be obtained through local farm bureaus.

Sporadic damage by cottontail rabbits is usually most severe during the first heavy snow, but trees and shrubs should receive a repellent treatment early in the fall season. Lime-sulphur, copper carbonate, copper sulphate, asphalt emulsion and ethylene dichloride were used successfully for this purpose by the fish and wild life service of the United States Department of the Interior, which introduced the formula known as rabbit repellent 96 A. It may be sprayed or painted on dormant plants which do not have many side branches, inasmuch as all branches must be covered to a height just above the reach of rabbits when snow is on the ground. A gallon of the mixture will cover from 200 to 500 plants, depending upon their size, and one application will suffice for the season. The grayish deposit caused by the mixture can be washed off before the plants are sold. The rabbit repellent 96 A may be ordered from the Rodent Control Fund, South College building, Amherst, Mass., at \$3.50 a gallon, express collect.

Another repellent not so adhesive as 96 A is Good-Rite Z. I. P., newly produced by B. F. Goodrich Chemical Co., Rose building, Cleveland, O. This mixture also leaves a whitish deposit on the plants, must be applied during nonfreezing weather and may need a second application some winter day when the temperature is above freezing. For spray application, use one pint of the mixture to every two and one-half gallons of water. For painting, use the undiluted mixture or only a small quantity of water mixed with the solution. This repellent must reach only to the exact height of the trees or shrub which the rabbit may contact when there is heavy snow. Good-Rite Z. I. P. costs about 75 cents a pound when purchased in small quantities.

SHRUBBERY, evergreens, shade trees and landscaping services will be featured at the newly opened Allison Nurseries, Albemarle road, Charlotte, N. C. Charles W. Allison, Jr., owner, has employed John F. Cato as general manager, and both men will handle the landscaping service.



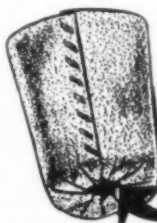
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No. 2	9 1/2 ins.	7 ins.	8 ins.	78 lbs.	4.75		45.00
No. 3	9 1/2 ins.	8 ins.	9 ins.	88 lbs.	5.25		50.00
(Packed 25 in carton)					Per 100	Per 50	Per 75
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					Per 100	Per 1000	
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COVER ILLUSTRATION.

Fothergilla Major.

Four species of fothergilla are native to the southeastern United States; gardeni, major, monticola and parvifolia. The first three species are grown to a considerable extent as ornamental shrubs.

The fothergillas belong to the witch hazel family, which contains the common genera hamamelis, Witch-hazel; corylopsis, winter hazel and liquidambar sweet gum. The generic name fothergilla is named after John Fothergill, a noted English physician, who lived from 1712 to 1780 and who introduced into cultivation many new plants.

Fothergilla major, the large fothergilla, is an upright shrub, reaching a height of approximately ten feet at maturity. It may be nearly as broad as high. It is a native of Georgia. The stout, hairy branches bear large, rounded to ovate leaves, two to four inches long, that resemble to a considerable extent the leaves of the common witch hazel. The leaves are dark green above and glaucous and slightly hairy beneath. The glaucous characteristic can be used to distinguish this species from Fothergilla monticola. The fall foli-

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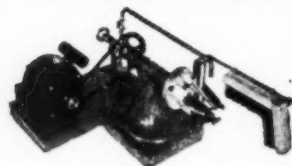
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age color is a brilliant yellow to orange and red.

The most interesting characteristic of the fothergillas is the unique flowers. The flower of Fothergilla major is well illustrated in the cover picture. The flowers are fragrant, white, borne in spikes or terminal heads, one to two inches long, and bloom in early May just as the plant comes into leaf. The fruit is of no ornamental importance.

The cultural requirements of the fothergilla are not exacting, and the plants are free from serious insects and diseases. They are hardy in Ohio, Massachusetts and similar zonal regions.

These shrubs prefer a slightly acid, light and moist but well drained soil. Open woodland areas are ideal. Light shade is desirable.

The fothergillas can be propagated by softwood cuttings taken as they start to harden. Heel cuttings may be preferred. Propagations also can be accomplished by seeds, which usually take two years to germinate unless stratified, and also by layering.

The fothergillas may be used for border planting, foundation planting and for marginal, underplanting in open woodland areas. The plants transplant with some difficulty and become reestablished slowly, but they are well worth using to a greater extent in landscape plantings. They are especially attractive when used against an evergreen background, which properly sets off their flowers and fall foliage.

L. C. C.

METHODS FOR THE SMALL GROWER.

[Continued from page 13.]

to name, all can be grown from seeds. In fact, when one looks at a list of one of the specialized seed merchants, the list would appear to be almost endless.

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ing all of these from seeds if possible. I realize that a frame is not essential for some of the larger-seeded types such as ilex, Cornus florida and taxus, but for the small grower, who perhaps does not have much experience and who can give only a limited amount of time to looking after the seeds, sowing in frames is by far the best method. As his knowledge and skill increase, he will find that the larger-seeded types of nursery stock can be sown successfully in carefully prepared open ground beds.

Seeds of the larger type generally have to be stratified. Juniper, ilex, Cornus florida and taxus all come into this category. The seeds should be

picked up as soon as ripe. If they are fleshy, then they should be cleaned by soaking the seeds in water for a few days and allowing the coating to ferment, when the soft outer tissue can be rubbed off on a fine sieve and washed away. The clean seeds should then be mixed with an equal amount of washed, sharp sand, and the mixture put in a barrel or box or similar container and placed outdoors through the winter. The seed container should be checked carefully from time to time to see that mice or other animals are not using it as a winter storehouse. Early in the spring the seeds should be sown in a carefully prepared bed, sowing to

be done as early as possible after the ground becomes workable. We cover our seeds at once with a mixture of sand and peat which has been taken from the propagating houses. It is a good rule to cover the seeds with at least their own thickness of this mixture. Larger seeds may require slightly more than their own thickness in covering, whereas small seeds, such as some of the thujas and the ericaceous plants, will require little or no covering whatsoever.

Small seeds, we find, succeed best if sown on a bed of either shredded sphagnum moss or peat moss. The section of the frame is prepared in the ordinary way by raking, leveling, cleaning and mixing a fair quantity of sand with the soil. Then a layer of about one-half inch of peat moss is spread over the surface of the frame, leveled and firmed, and the seeds are sown by hand onto the surface of this peat. Again the seeds and peat are firmed with a flat board to press the seeds right into the bed of peat, and then finally the whole receives a careful spraying with a fine mist of water. The frame is closed tight, carefully shaded and then checked daily and sprayed when necessary. Nothing further is required until the seeds germinate.

The more rapid-growing types of seeds can have the sash removed almost as soon as they germinate and can certainly be transplanted from the frame at the end of the first season. The smaller types of seedlings, such as rhododendrons, azaleas, pieris, etc., may need to stay in the frame for two seasons before being transplanted. Generally speaking, nothing more than normal cultural care is required throughout this period of early development. Weeds must be eliminated. The plants must never become dry and, as they develop, should receive plenty of air. Finally, of course, the sash can be removed and replaced with heavily lathed shades to harden up the seedlings toward the end of the first year. Seedlings of rapid-growing plants, such as perennials, can and should be removed from the frames a few weeks after germination. They can then be transplanted into another frame, spaced two to four inches. There they will develop, by the end of the year, to strong, healthy material ready for resale.

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Book Reviews

GARDEN GUIDE FOR MIDWEST.

In the vicinity of Kansas City, Stanley McLane has long been known for his work in planting the Country Club district and other subdivision developments of the J. C. Nichols Co. Mr. McLane is a former president of the Western Association of Nurserymen and has served on committees of the American Association of Nurserymen. With the J. C. Nichols Co. for thirty years, he heads its landscape department and superintends its 100-acre nursery.

Further service from Mr. McLane to horticulture in the central states has just appeared in the form of a book of 380 pages, "Garden Guide by Months for the Midwest." Published by the Frank Glenn Publishing Co., Kansas City 6, Mo., at \$3.75, it is a handsome volume with twelve plates in color, and its contents are concise and direct instructions for the gardener in the mid-western area of hot summers and cold winters.

The contents are arranged by months so that the reader can concentrate on his gardening problems of the period. But the book is much more than a set of do's and don't's, for here and there discussions extend over several pages as to the selection of suitable shade trees, varieties of chrysanthemums to plant, the use of chemical weed killers and like subjects.

Since the preponderant majority of garden books are written on either the Atlantic or Pacific coast, this volume is one that nurserymen in the central states will be glad to recommend to their local customers. For their reference, an index of sixteen pages gives access to the comments on any plant or subject treated, no matter in which month's chapter they appear. The end leaves show four maps of seven states about Kansas City, showing the average dates of first killing frost in fall, average dates of last killing frost in spring, average length of frost-free period and average precipitation from April to September.

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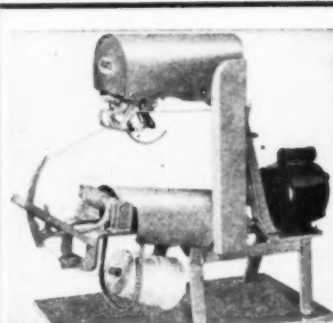
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the subject of landscaping airports, published by the Civil Aeronautics Administration of the United States Department of Commerce. Intended as a guide for airport owners, operators and builders, the illustrated booklet emphasizes that appearance is important and provides definite returns in the airport business, as well as in any other business. The treatise is obtainable by sending 15 cents in cash to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

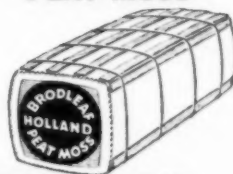
NUT GROWERS' REPORT.

Members of the Northern Nut Growers' Association have just received the fortieth annual report of the organization, containing proceedings of the meeting held at Beltsville, Md., last September, together with additional papers on nut tree culture. This volume of 236 pages, containing a few illustrations, represents the latest information on nut species and varieties in cultivation and on trial, together with data pertinent to the association itself. A useful appendix is a cross section of nut tree and tree crop experimenting in the United States and Canada, compiled by J. Russell Smith, Swarthmore, Pa.

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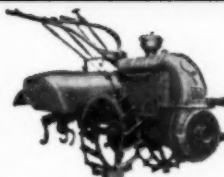
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OBITUARY

Arthur N. Champion.

Arthur N. Champion, 70, head of the Champion Nurseries, Perry, O., died suddenly October 28, while sitting in his automobile, at Perry. Funeral services were held October 31 at the Methodist church there.

Born at Grinnell, Ia., he and his parents moved to Perry when he was 11 years old, and he graduated from the Perry high school in 1902. He then joined his father's firm, which the latter founded in 1891, and he continued as manager and owner after his father's death in 1921. The nursery's facilities were enlarged, and the Champion Nurseries began to specialize in ornamentals, in addition to a general line of fruits previously grown. The firm became one of the outstanding wholesale nurseries of the state, operating 200 acres according to the most modern methods.

Arthur N. Champion was a past president of the Ohio Nurserymen's Association and had served on committees of the American Association of Nurserymen. He is survived by three sons, Russell, Roger and Maurice, who have been associated in the business, as well as by seven daughters and the second Mrs. Champion.

John W. Sarber.

John W. Sarber, 61, owner of the Sarber Seed & Nursery Co., Topeka, Kan., died suddenly at his home October 16.

Born at Russell Springs, Kan., in 1888, he was reared in Kansas and was educated at the Culver Military Academy, Culver, Ind. He had lived at Topeka since 1925. Amateur gardening interests of the Sarbers eventually resulted in the Sarber Seed & Nursery Co.'s being formed. While Mrs. Sarber handled the administrative work in the nursery office, Mr. Sarber took care of the advertising copy, selling, packing and shipping of stock. From 1925 until 1940 he was associated with a radio station in an executive capacity, and his interest in radio advertising led to his firm's pioneering in using radio station WIBW, Topeka, Kan., as an advertising medium. By 1940 the nursery business had grown so that Mr. Sarber retired from his radio duties and devoted his full time to the firm.

A World War I veteran, he was also a past president of the Kansas Association of Nurserymen. Besides his widow, Mrs. Bess L. Sarber, he

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is survived by a son, John L. Sarber, San Luis Obispo, Calif.; two grandchildren, and a sister, Mrs. Mary Ball, West Orange, N. J.

Erle G. Brewer.

Funeral services for Erle G. Brewer, leader of the United States Department of Agriculture's division of Japanese beetle control and responsible for the department's regulatory activities against the Japanese beetle, Dutch elm disease and the gypsy and brown-tailed moths, were held October 22 at East Orange, N. J., where he died October 20 following a long illness. William Middleton has been named acting leader of the division by Avery S. Hovt, chief of the bureau of entomology and plant quarantine. Mr. Brewer had been in the insect control field since 1906 and in the employ of the department since 1920, almost entirely in responsible supervisory positions. He was born December 2, 1887, at Lynn, Mass., where he received his early education.

When the European corn borer became a pest of primary importance in 1920, Mr. Brewer's activities were directed against the spread of that insect. In 1937, he became leader of the bureau's division of Japanese beetle control, with headquarters at East Orange, N. J.

BERRIES FOR HOME USE.

Two new berry varieties, the Essex strawberry and the Amber raspberry, have been introduced by the New York agricultural experiment station, Geneva.

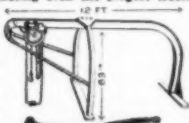
The Essex, formerly designated N. Y. 7225, is an especially early variety which resulted from a cross between Howard (Premier) and Deutsch Evern, made in 1926. Tests reveal that the fruit ripens about five days to a week earlier than the Howard. The berry is of medium

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HOIST ONLY . . .	105.00
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size, light red and of good quality. The plant is vigorous and yields fruit equal to or better than the Howard does at the Geneva plantings. The Essex is not recommended for commercial plantings, because of its size and susceptibility to bruising.

The new raspberry is called the Amber because of its yellow-orange color. Its large size, sweet flavor and high quality make it attractive to the home gardener. It is fully as large as that of any variety being grown at the station and is medium-firm, noncrumbling and conically long in shape with a large cavity. It is the latest raspberry to ripen, coming in after the Milton. The plants grow vigorously and increase freely, and little winter injury has been observed. The Amber resulted from a cross between Taylor and Cuthbert and has been cultivated at the experiment station since 1937. A limited number of the Amber raspberry plants are now available from the New York State Fruit Testing Cooperative Association, Geneva.

GLADIOLUS CORM SIZES.

Standardization of gladiolus corm sizes was done many years ago, and today it is the accepted method for ordering corms of all varieties by gladiolus growers throughout the world. However, much confusion has arisen as to what the exact measurements of the particular sizes are, since gladiolus catalogs long since have ceased to list the measurements of each size of corm. Many small growers do not know what number corms constitutes a flowering-size corm, and other growers are hazy in their ideas of the standard measurements of the various corm sizes.

In an effort to clear up the present muddle and conflicting ideas that surround the discussion of gladiolus corm sizes, the New England Gladiolus Society, in an issue of its publication, the Gladiolus Magazine, submitted a list of the approved measurements of corm sizes as follows:

Size No. 1, one and one-half to two inches in diameter.

No. 2, one and one-quarter to one and one-half inches in diameter.

No. 3, one to one and one-quarter inches.

No. 4, three-quarters to one inch.

No. 5, one-half to three-quarters of an inch.

No. 6, three-eighths to one-half inch.

The jumbo or oversize classification is applied to corms more than two inches in diameter.

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BERBERIS ATROPURPUREA.

Red Barberry.

	Per 100	Per 1000
2-yr. trans.		
15 to 18 ins.	\$25.00	\$200.00
18 to 24 ins.	30.00	250.00
24 to 30 ins.	35.00	300.00

BERBERIS THUNBERGI.

Green Barberry.

2-yr. trans.		
15 to 18 ins.	20.00	150.00
18 to 24 ins.	25.00	200.00
24 to 30 ins.	30.00	250.00

BERBERIS THUNBERGI.

Green Barberry.

2-yr. untr.		
10 to 12 ins.		30.00
12 to 15 ins.		50.00
15 to 18 ins.		60.00
18 to 24 ins.		80.00

Write for special quantity prices on 10,000 and up.

TSUGA CANADENSIS, Specimens.

Canada Hemlock.

	Each per 10	Each per 100
2 to 3 ft., B&B, heavy	\$ 3.10	\$ 3.00
3 to 4 ft., B&B, heavy	4.10	4.00
4 to 5 ft., B&B, heavy	6.10	6.00
5 to 6 ft., B&B, heavy	10.10	10.00

JUNIPERUS CHINENSIS PFITZERIANA.

Pfitzer Juniper.

15 to 18 ins., B&B	2.60	2.50
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JUNIPERUS EXCELSA STRICTA.

Green Juniper.

18 to 24 ins., B&B	2.60	2.50
24 to 30 ins., B&B	3.10	3.00

COLORADO BLUE SPRUCE.

30 to 36 ins., blue	4.10	4.00
30 to 36 ins., green	3.10	3.00
4 to 5 ft., blue	8.10	8.00
5 to 6 ft., blue	10.10	10.00

THUJA OCCIDENTALIS PYRAMIDALIS.

Pyramidal Arborvitae.

2 to 3 ft., B&B	2.60	2.50
3 to 4 ft., B&B	3.10	3.00
4 to 5 ft., B&B	4.10	4.00
5 to 6 ft., B&B	5.10	5.00

THUJA OCCIDENTALIS.

American Arborvitae.

3 to 4 ft., B&B	3.10	3.00
4 to 5 ft., B&B	4.10	4.00

THUJA OCCIDENTALIS GLOBOSA.

Globe Arborvitae.

	Each per 10	Each per 100
18 to 24 ins., B&B	\$ 2.10	\$2.00
24 to 30 ins., B&B	2.60	2.50

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Upright Yew.

24 to 30 ins., B&B	4.10	4.00
30 to 36 ins., B&B	5.10	5.00
36 to 42 ins., B&B	6.10	6.00
42 to 48 ins., B&B	10.00	...
48 to 54 ins., B&B	15.00	...

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Spreading Yew.

18 to 24 ins., B&B	3.10	3.00
24 to 30 ins., B&B	4.10	4.00
30 to 36 ins., B&B	5.10	5.00

TAXUS HICKSI.

Hicks' Yew.

24 to 30 ins.	4.10	4.00
30 to 36 ins.	5.10	5.00
36 to 42 ins.	6.10	6.00

TAXUS HATFIELDI.

Hatfield Yew.

24 to 30 ins.	4.10	4.00
30 to 36 ins.	5.10	5.00

TAXUS INTERMEDIA.

18 to 24 ins., spread	3.60	3.50
24 to 30 ins., spread	4.60	4.50

TAXUS BREVIFOLIA.

Spreading Yew.

15 to 18 ins., B&B	4.10	4.00
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RETINOSPORA PLUMOSA.

Plumosa.

24 to 30 ins., B&B	2.10	2.00
30 to 36 ins., B&B	2.60	2.50
36 to 42 ins., B&B	3.10	3.00

RETINOSPORA PLUMOSA.

Plumosa Aurea.

24 to 30 ins., B&B	2.10	2.00
30 to 36 ins., B&B	2.60	2.50

RHODODENDRON CATAWBIENSE.

18 to 24 ins.	3.10	3.00
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RHODODENDRON MAXIMUM.

18 to 24 ins.	3.10	3.00
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Cabot.

2 to 3 ft.	2.10	2.00
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Hill Golden Pfitzer Juniper

Juniperus Chinensis Pfitzeriana Blue
Blue Pfitzer Juniper

Juniperus Chinensis Sargentii Green
Green Sargent Juniper

Juniperus Communis Depressa Aurea
Golden Prostrate Juniper

Juniperus Communis Depressa
Vase Shape
Vase-shaped Prostrate Juniper

Juniperus Chinensis Keteleeri
Keteleer Juniper

Juniperus Procumbens
Japanese Juniper

Juniperus Procumbens Nana
Dwarf Japanese Juniper

Juniperus Virginialis Globosa
Globe Hillbush Juniper

Juniperus Virginiana Canaerti
Canaert Juniper

Juniperus Virginiana Cupressifolia
Hillspire Juniper

Juniperus Virginiana Glauca
Silver Cedar

Juniperus Virginiana Hilli
Hill Dundee Juniper

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